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FEBRUARY 8, 1928

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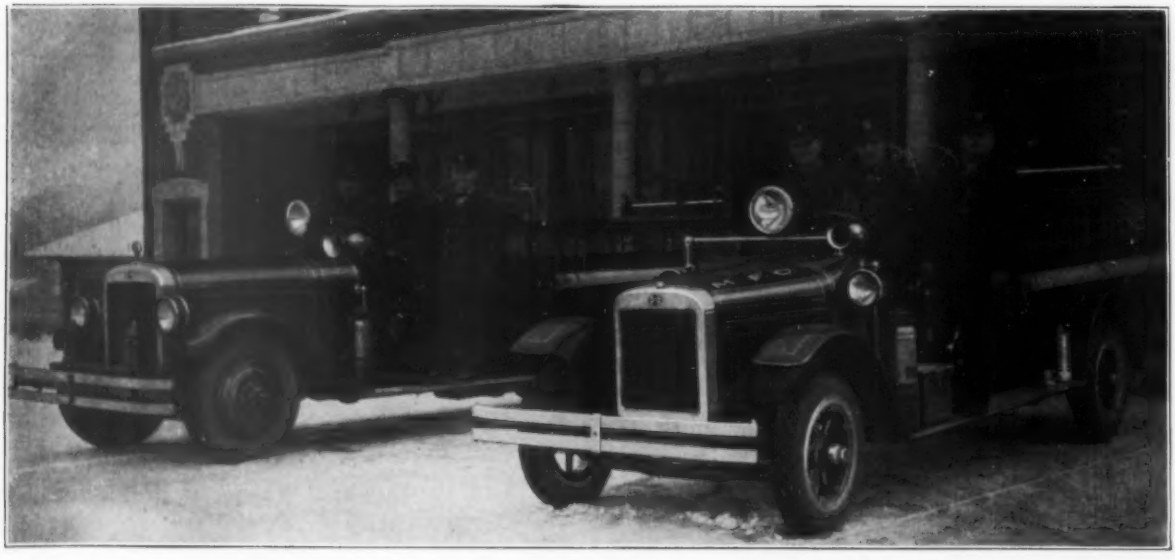

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The Journal of the Fire Protection Profession Since 1877

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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OUR readers certainly are scattered,—all over the world!

¶ Above we reproduce part of the envelope just received from Korea with an International Money Order covering a subscription, by K. Oguma, to be addressed:

KEIJO FIRE BRIGADE
Inside of Nandaimon
Nandaimon-dori,
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¶ A few days ago from Budapest, Hungary, we received an order for FIRE ENGINEERING covering not only 1928 but all the back issues of 1926 and 1927.

¶ Another subscription was received the other day from the Straits Settlements (Malay Archipelago); in fact, FIRE ENGINEERING is so widely read, the world around, that we are highly conscious of the obligation it imposes upon us to give of our best.

The Publishers

CONTENTS

FEBRUARY 8, 1928

VOL. LXXXI No. 3

How to Get Capacity from Your Pumpers, by O. J. Swander 97
Should Be Tested Periodically and After all Repairs.

Fighting Fires in Frame Tenements, by Chief Charles L. McCarthy (Portrait) 99
Some Practical Hints by Chief Along These Lines.

A Coal Pocket Fire Gets Away (Illustrated) 101
Fire Spreads to Pumping Station, Putting It Out of Commission.

With the Editor 103
Comments on Current Events and Live Topics by Our Editorial Staff.

Questions and Answers 105
Replies to Questions on All Manner of Subjects of Fire Fighting and Fire Protection.

Recent Important Fires Specially Reported (Illustrated) 107
Series of Incendiary Fires in Washington, D. C.—Burnings of Two Weeks.

Of Interest to Volunteer Fire Department 113
Matters of Importance to Volunteer Firemen.

Fire Department Activities 119
Newsy Notes from All Over the Country with Matters Firemanic.

Fire Department Improvements 120
Record of Business Activities in the Fire Protection Field.

False Alarms 123
The Humorous Side of the Fire Protection Profession.

Industrial Plant Protection (Illustrated) 124
Some Items of Interest in Industrial Plant Brigades.

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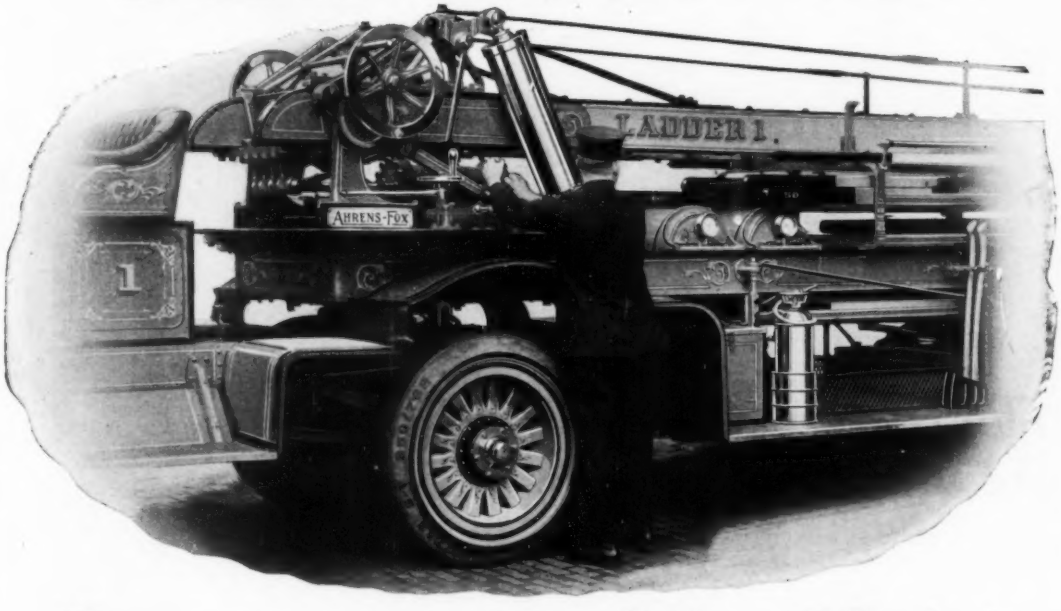
Ahrens-Fox



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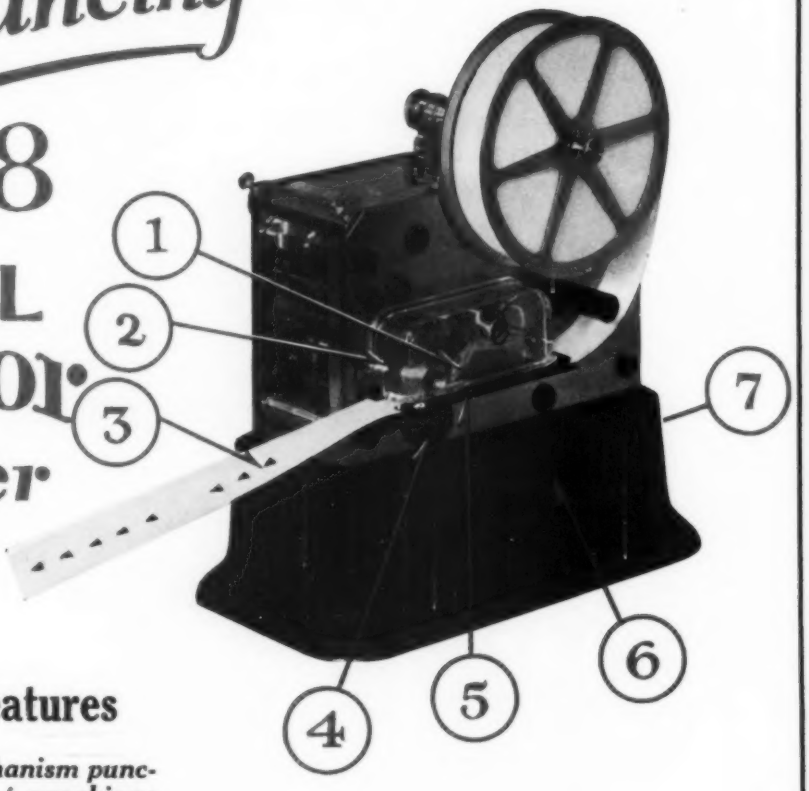

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(A bulletin describing this Register more fully will be sent upon request)

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FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXXI FEBRUARY 8, 1928 NUMBER 3

How to Get Capacity from Your Pumpers

Should Be Tested Periodically and After All Repairs—Various Articles Needed—A Sample Test for 750-Gal. Pumper

By O. J. SWANDER, Engineer, Kansas Inspection Bureau

VERY little can be known of the condition of the pumpers of a department unless periodical and properly conducted tests are held to determine if the apparatus is giving full service as required. In submitting the following article, Mr. Swander writes: "In my work of grading the fire protection of the various cities and towns in Kansas, I conduct service tests on their pumping engines where such equipment is in service, and I often find that the department has difficulty securing rated capacity from their apparatus. Only a few departments make annual tests or tests after repairs, and the others have no way of knowing the condition their pumper is in. This, coupled with the fact that I am convinced many fire department officers do not have a rudimentary knowledge of fire stream hydraulics, induced me to write the inclosed article for FIRE ENGINEERING:"

Few fire departments are equipped with proper facilities for testing their automobile pumping engines, and many pumpers are in service which, save for an occasional demonstration where they throw water over a church steeple, court house, or "the highest building in town"—methods more spectacular than exact—have not been tested since they were put into service. An automobile pumping engine is a delicate piece of machinery at the best, and, unless it is tested regularly, it cannot be depended upon at a large fire. Experience has shown that where regular and systematic tests of engines are not made, defects often exist unsuspected until they show up at a large fire where the apparatus is called upon to deliver its full capacity.

Efficiency in fire fighting depends upon the utilization of all facilities to their maximum capacity. Few fire departments have apparatus to spare, and, in any event the delay and confusion incident to waiting for additional companies to respond and do the work that might have been done by the first company in, may prove disastrous. The breakdown of a pumper at a fire, or its inability to deliver full capacity at an effective pressure, may be the direct cause of a conflagration that will reflect discredit upon the fire department.

What is Needed for Test

To be absolutely certain that a pumper will perform to perfection under any condition of service, it should be tested after all repairs, and, in any case, at least once each year, in accordance with the National Board of Fire Underwriters' rules for testing. No elaborate or costly equipment is required to make this test, the only special appliance necessary being those listed below:

A speed counter
A stop watch
A nozzle stream pitot
Two pressure gauges
A set of smooth-bore nozzles
Discharge tables for smooth-bore nozzles
A table of friction loss in fire hose

Uses of the Various Articles

The speed counter is used to take the speed from some convenient shaft in order to determine engine and pump speeds; this is desirable to determine pump slip and motor horsepower, but it is not necessary if the test is merely to determine whether the pumper will deliver its rated capacity at a suitable pressure.

A stop watch is convenient, but satisfactory results may be secured by any watch with a second hand.

The pitot tube should be of the nozzle stream or so-called engine pitot type, not a hydrant pitot, and it may be purchased from any of several reliable companies. It should be connected by a one-fourth inch brass pipe to a pressure gauge, and, to prevent vibration of the needle, an air chamber should be provided.

The gauge to be used on the pitot should read up to 200 pounds, and should be divided for every pound. The gauge used to register pump pressure should read up to 400 pounds, and need be divided only at five pound

"PROPERLY conducted tests will not only determine the condition of the apparatus, but will prove of inestimable value as a drill for engine crews and officers. Very often a severe loss is directly traceable to the failure of the officer in charge to use the proper size nozzles, to siamese his lines, to use three-inch hose or to the fact that he attempted to take off too many streams."

intervals; the pressure gauge on the pump may be used for this if it is calibrated before the test.

Nozzles suitable for testing are found in the regular equipment of most fire departments. Only smooth-bore nozzles should be used, as discharge from ring nozzles is uncertain.

What Should be Required at Test

The National Board of Fire Underwriters recommend that, for acceptance, pumping engines be required to deliver their full rated capacity at 120 pounds average net pressure for two hours, 50% of their rated capacity at 200 pounds average net pressure for one-half hour, and 33% of their rated capacity at 250 pounds average net pressure for one-half hour.

This test is, however, for a new engine just being put into service; but for service tests, it is usually considered sufficient if the engine is required to deliver its rated capacity at 100 pounds average net pump pressure for 20 minutes, and 50% of its rated capacity at 200 pounds average net pump pressure for ten minutes.

The proper layout for each test may be determined by referring to the discharge tables, and to the tables of friction loss in fire hose. The capacity test can usually best be made by siamesing two lines of hose into a deluge set. The two pressure tests can usually be made by using only one line of hose taken from one outlet.

Test for a 750-gallon Pumping Engine

The copy of the test accompanying this article is for a 750-gallon pumping engine, and shows approximate layouts for a pumper of this size, as well as the necessary data to record.

Result of Acceptance Test of Automobile Pumping Engine

First Test—Duration, 2 hours.
Layout of Hoze and Nozzles—Two lines 100 ft. each, 2½-inch hose, siamesed, 1¾-inch tip.
Average Nozzle Pressure—76 lbs.
Average Discharge—793 gallons per minute.
Average Net Pump Pressure—130 lbs.
Engine Speed—R. P. M. 1217.
Pump Speed—R. P. M. 667.
Actual Displacement per Revolution—1.19 gallons.
Remarks—None.

Second Test—Duration, 30 minutes.
Layout of Hoze and Nozzles—One line 100 ft. 2½-inch hose, 1⅛-inch tip.
Average Nozzle Pressure—116 lbs.
Average Discharge—403 gallons per minute.
Average Net Pump Pressure—212 lbs.
Engine Speed—R. P. M. 1168.
Pump Speed—R. P. M. 378.
Actual Displacement per Revolution—1.07 gallons.
Remarks—None.

Third Test—Duration, 30 minutes.
Layout of Hoze and Nozzles—One line 100 ft. 2½-inch hose, 1-inch tip.
Average Nozzle Pressure—80 lbs.
Average Discharge—264 gallons per minute.
Average Net Pump Pressure—264 lbs.
Engine Speed—R. P. M. 847.
Pump Speed—R. P. M. 274.
Actual Displacement per Revolution—96 gallons.
Remarks—None.

Value of Such Tests

These tests will not only determine the condition of the apparatus, but will prove of inestimable value as a drill for engine crews and officers. In most cases where a pumper fails to perform satisfactorily at a fire, subsequent tests show that the fault did not lie with the apparatus as might be supposed, but rather with the officer in charge who overestimated the capacity of the engine and used too small nozzles, or who gave no consideration to the length of hose lines, or to the friction loss and its effect on the capacity of his engine. Again, the officer may not have considered the size and length of main from which the pumper was drafting, or the distance of the pumper from the fire.

Of Help to Officer in Charge at Fire

Very often a severe loss is directly traceable to the failure of the officer in charge to use the proper size nozzles, to siamese his lines, to use three-inch hose, or to the fact that he attempted to take off too many streams. To be sure, he cannot sit down when he reaches a fire, take out his pencil and paper and make calculations; but he can develop his judgment beforehand, and there is no better way to do this than to assume various conditions of service, make the necessary calculations in the engine house from tables, and finally, to make the layout and see for himself the results. Such training will serve the officer in good stead when he is called upon to place his pumpers at a large fire.

New Coats for Boston Firemen

A new uniform overcoat has just been adopted for Boston firemen.

The coat is described in a general order as follows:

Overcoats

Chief of Department—A double-breasted sack overcoat, opened at front of neck, with lapels and convertible collar.

Collar—Shall be not less than four inches deep at rear; at points of lapels it shall have turned-in seams, handsewn, and, when converted, it shall raise in the front only, and meet evenly at points of notch. Points of the collar to be slightly rounded, and, when converted, shall cover top buttons of coat.

Length—It shall reach to the knees.

Buttons—To have six large regulation buttons on each breast, grouped in pairs, spaced horizontally according to size, but shall be not less than four and one-half inches apart, and there shall be a single large regulation button under each lapel to be used when coat is buttoned to neck; three small sized regulation buttons on each sleeve at the cuff which have ornamental double stitching.

At the Left Is the Old Style Coat —At the Right Is the New Model

Lining—Shall be lined throughout with scarlet cloth lining, weighing fourteen ounces to the yard, with fast black venetian material in yoke and sleeve; sleeves to fit snugly at wrists.

Edges and Seams—To be raw edge, with half-inch double stitching.

Fit—It shall be slightly form-fitting, with seam in the back, with centre vent spaced from five to seven inches below the waistline, no hook or other ornamental stitching at point of vent. It shall be fitted so that the under coat shall be visible when collar of overcoat is open.

Pockets—No outside pockets, but one inside of each breast, with one small cash pocket at lower left side; pockets to be piped in cloth tongue.

Eyelets—Eyelets for badge will be placed so that the bottom of the badge will be in a line with the top of the second button from the top and 1½ inches to the left.

For All Other Officers—The same as for the Chief of Department, except that there shall be five large regulation buttons on each breast spaced approximately four and one-half inches apart vertically.

(*Continued on page* 114)

How to Fight Fires in Frame Tenements

Study of Typical Construction—Keeping the Fire from Entering Partitions—Locating and Estimating Intensity of the Fire

By CHARLES L. McCARTHY, Chief of Fire Department, Worcester, Mass.*

TO prevent a fire is one thing and to fight it is another, and since it is necessary for me to deal with frame buildings as my subject, consideration must be given to "Fire-Fighting" in its active sense. That is, how to deal with outbreaks in this type of building and the best methods of using apparatus.

Chief Charles L. McCarthy

The fire risk becomes more apparent as soon as it is realized that it is a menace to the home. The primal requisite, when a fire occurs in a frame building, is time. A few seconds lost may mean thousands of dollars more damage to property and perhaps the loss of a human life, the value of which cannot be measured in dollars and cents.

In connection with the matter of the time, it might be well to add, that the stretching in of hose lines at fires has been the subject of much comment, but when time is the paramount object, hose cannot be measured by the foot. However, when the location of the fire has been ascertained, the commanding officer of a Company should have a fairly good idea of the number of lengths required, and it shows poor training to see hose coiled in the streets in every direction at the site of the outbreak.

Shut Off Nozzle for Inside

Shut-off nozzles should be used for inside work wherever possible in order that the streams may be shut off as soon as possible. That is necessary, because in almost all frame buildings the floors are not filled, and if care should not be exercised in the use of water, the water would run by and through the floor boards, destroying the ceiling beneath and the furnishings of the lower floors. Also, wherever it is possible, in a confined fire, soda and acid chemicals should be used in place of water.

Let us consider for a moment one of the most hazardous of frame buildings. That in which there has been erected a store over which there are two, three or four tenements or apartments. We will suppose that the blaze has started in the store on the ground floor. Perhaps a general knowledge of the construction and arrangement of interior partitions may be helpful in an endeavor to confine the fire to the room, closet, hall or other point of origin. In this type of structure partitions are usually constructed as follows: A sleeper is laid on the floor board, a similar piece of timber is secured to the under side of the floor beam above, and to these are secured the studs, which are centered at an average of about sixteen inches.

Upon the studs, wood lath is nailed, and the plaster placed upon these laths. Sometimes it is found that ½-inch or ¼-inch plaster board have been used in lieu of the lath and plaster. In stores where no rooms were originally intended, it is found that partitions have been constructed of ordinary tongued and groved boards. Too, the stairs leading to the cellar and leading to the tenements above are of wood, and all partitions are composed of wooden lath and plaster.

Keeping Fire from Partitions

To prevent the fire from reaching the soil pipes and getting through the partitions and by this means ascending to the top only to mushroom on the highest floor, is the first thing to be done. A line of hose should attack the fire from the front through the main door. The second line should go to the rear to cover the rear door and transom to stop the fire from spreading up the back stairs and piazzas, while ladders should be raised to the front of the building and all floors above should be examined to be sure that the fire has not followed through pipe recesses or vertical openings.

If the alarm has been turned in promptly a fire of this sort will be confined to the store where it originated. But if there has been a delay and the fire has burned through partitions and ceiling and has communicated with the floors above, a very different problem awaits

"EXTREME caution must be taken in this class of construction to guard against the spread of fire. While it is burning, take the precautions necessary by opening up the concealed spaces which permit the passage of fire and place the lines accordingly. After the fire is under control care must be taken to examine all openings and concealed spaces."

* Paper delivered at convention of Vermont State Firemen's Association, St. Albans.

the commanding officer. A line through the front and a line to the rear is once again in order, the line in front endeavoring to keep the flame from coming outside of the store and catching the curtains of an open window above. If the fire is spreading, or has spread before you arrive, use the lines to confine it to the room or place where it originated. This method will control the fire and finally lead to its extinguishment.

By this time ladders would have been placed to the floors above, and in less time than it takes to tell chemical lines would have been run to the floors above and especially to the top floor. This line is of the greatest importance, and if the position is reached quickly, the fire should be prevented from mushrooming on the top floor. All possible effort should then be made to advance the lines to the seat of the fire, and here is where the men must take their medicine if need be. Life perhaps depends on their grit, determination and endurance, for work of this kind often entails severe trials. There is one more essential point to be guarded, namely, the partitions and vent pipes.

Examine False Work

In case of a fire in or around a partition, open it up until lath or studs show clean, especially at the closets. This is the point where a great amount of false work will be found, also a space from the top of the closet at the lath and plaster ceiling within the closet up to the under side of the floor above. When on the top floor it may extend to the attic. Look for a space on the floor boards at the sills of partitions, as fire may drop to lower ceilings through the space at this point.

False work at a chimney or flue, for the purpose of placing a mantel in front of a chimney or flue should be thoroughly examined. Many of these are found in frame tenements and consist of the placing of studs alongside of a chimney or flue, and then applying lath and plaster to furring strips placed on the face of the chimney; this leaves an open space both at the sides of the chimney and on its face, extending from the floor to under side of floor boards above. If on the top floor, the opening may extend to the attic. In many cases this space will extend throughout from the first floor to the attic. False work may also be found around and over closets, alcoves and folding or sliding doors. Every partition being a vertical flue and there being very few fire stops the lath should be stripped until it is satisfactorily proved that there are no nests of fire concealed behind the plaster. This disposition of forces should successfully handle a fire of such character.

We will next consider an outbreak which has occurred in the cellar of a frame building.

Locating First Streams

The first objective is to confine the blaze. If there are windows to the cellar it is a comparatively easy matter to locate the seat of the fire, but if there are no windows and it is impossible to make the stairway or bulk-head, a bad condition exists.

By the intensity of the heat on the floor or surrounding walls one is sometimes enabled to judge where it would be best to place the first stream. All haste should be given to cutting a hole in the floor and dropping a cellar pipe into this hole. The cellar pipe should be of a type that would enable the operator to turn the nozzle in all directions. This would insure the hitting of the flame at least once in every revolution. As soon as the cellar has been cooled and sufficiently ventilated to allow entrance by the stairway or bulk-head, a line should be taken into the cellar so as to extinguish any blaze that might have jumped or burned through the cellar partitions. The number of holes to be cut into the cellar would be determined by the intensity of the blaze. Bulk-heads are usually found where there is a store on the first floor, and where there is an entrance from outside in front. The object of a bulk-head is to partition off space for some particular opening, consequently there is left an open space behind this partition. This again must be carefully searched for hidden sparks and fire.

In the case of a fire in a cellar which has a furnace to heat the premises, examine the heater pipes and wall and floor registers on all floors, as streams which have been thrown in the cellar may knock down the hot air pipes and sparks will often sift up through the open registers into the various rooms above.

Most Troublesome Fire

Rear piazza fires are the most troublesome of all fires in this type of building, as they are constructed entirely of wood with a metal ash chute running the entire height of the building from the cellar through the different floors to the top floor. This single ash chute is used by all the various tenants for the depositing of ashes and sometimes paper and other combustible material is slyly deposited therein. Many times a tenant will carry out the hot ashes from the kitchen range and in throwing them into the chute some of the hot ashes will drop onto the wood floor unnoticed, and in a short space of time there is a fire going merrily. By the time this fire is discovered and the Department summoned the whole rear end of the building is a mass of flames.

Worcester, Mass., being known as the home of the three-decker, has a large number of such fires during the course of a year, and the method of extinguishment used is as follows:

Lines Carried Up Front Stairway

The first company to arrive lays a water line to the rear of the building and knocks down the fire from the ground, cooling it off as much as possible before trying to make the stairway. The following companies carry chemical lines up the front stairway to each floor, opening windows as fast as possible, at the same time working their way to the rear of each flat to see that the rear doors of each flat are closed and to prevent the flames from spreading into each of the flats. This

(Continued on page 120)

Some of the Many Who Made Portland Convention a Success

This photograph was taken on New Year's day in front of the Central Fire Station, Portland, Ore. To those who are now shoveling snow, how pleasant it must be to note that Captain Fred B. Day on the left and Captain Edward L. Boatright on the right are minus their coats. Capt. Day had charge of the autos at the Portland I. A. F. C. convention and Capt. Boatright was chairman of the Ladies' Entertainment Committee. Battalion Chief William R. Heath, in the center, was in charge of transportation and hotels. The squad wagon was recently placed in service.

A Coal Pocket Fire Gets Away

Fire Spreads to Water Works Pumping Station Putting It Out of Commission—Large Area Involved

IT is not often that a small fire department is faced with the problem of extinguishing a fire in a coal pocket, garage, lumber yard and oil tank all burning at the same time. That is what the fire force described in this article of the series on administration encountered when a coal pocket fire got away from it.

The city in which this fire occurred has a population of about 12,000 and is located in the central west. The fire department consists of five companies, three engine companies and two truck companies. One of the engine companies and one of the truck companies are volunteer organizations while the rest are paid companies, but poorly manned.

Fire Department

Engine Co. No. 1, a paid company, had four men on duty at the time of the fire. This company was equipped with a 700-gallon triple combination machine with 1000 feet of hose; Engine Co. No. 2, also a paid company, likewise had a force of four men, and was equipped with a 500-gallon triple combination machine with 600 feet of hose; Engine Co. No. 3, a volunteer company, had a membership of 25 and possessed a 750-gallon triple combination carrying 1200 feet of hose.

Truck Co. No. 1, a paid company, with three men, was equipped with a city service truck while Truck Co. No. 2 was a volunteer company with a membership of 38 and possessed a city service truck.

Response to alarms at the fire described in this article was as follows: First alarm, Engine Cos. Nos. 1 and 3 and Truck Co. No. 1.

General alarm Engine Co. No. 2 and Truck Co. No. 2.

Water Supply

The water supply of the city was furnished by a direct pumping system, the pumping station being located directly across a 50 foot street from the coal pocket which burned. On the far side of the city was a 500,000 tank supplied from the city main and used to equalize the pressure and distribution of water during periods of heavy draught. When the pumps were in operation the pressure in the mains in the neighborhood of the fire stood at approximately 75 pounds. When the pumping station was out of commission and a heavy flow was required from the mains in the neighborhood of the fire, the pressure dropped to less than 30 pounds.

Description of Property Involved

The diagram herewith gives the general layout of the property involved, including the buildings surrounding this fire.

The coal pocket in which the fire started is located in the center of the block on Smith Street between 9th and 10th Avenues. It was of heavy timber construction, about 72 feet in height and was well filled with soft coal at the time of the fire. Directly behind the coal pocket was a bank of five fuel oil tanks mounted 12 feet above ground and each containing between 12,000 and 25,000 gallons of fuel oil.

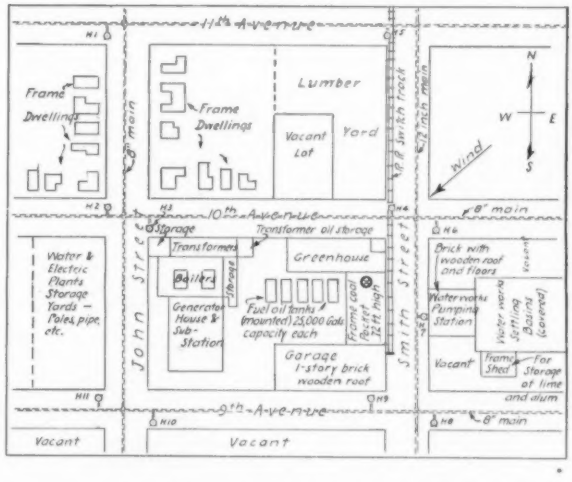
Directly across the street from the coal pocket was the water works pumping station, as shown in the diagram.

The Fire

The fire was discovered burning in the coal pocket by the night engineer at the water works pumping station about 5 a. m. on an October morning. He reported having smelled smoke for several hours prior to discovering the blaze which would indicate that the fire had had considerable start before detected.

The engineer promptly called up the fire department and the first alarm assignment responded. This assignment included Engine Cos. 1 and 2 and Truck Co. No. 1.

Immediately upon the arrival of the first engine company, two members were sent up into the coal pocket and discovered fire burning up beneath the roof above the coal. They retreated and lines were sent by ladders about half way up the coal pocket and then taken inside to a stairway but could make no further headway on



account of the intense smoke and heat. This line was laid in by Engine Co. No. 1 stationed at hydrant 6. The line was equipped with 1¼ inch nozzle. It operated for a while in an endeavor to cool off the atmosphere and make it possible for the men to proceed.

A second line was laid from Engine Co. No. 3, stationed at hydrant No. 4, to the rear of the coal pocket but no entrance to the pocket could be made at this point. The line was sent up by ladder and endeavored to wet down the roof of the coal pocket but with little effect.

Shortly after the second line was put into operation fire burst through the roof and it was then apparent that the coal pocket was doomed, on account of the progress the fire had made and the inflammable construction of the pocket. The chief, arriving about this time, sent in a call for the remaining two companies, Engine Co. No. 2 and Truck Co. No. 2.

Engine Co. No. 3 remained at the rear of the coal pocket and continued to wet down as best it could while

the line from Engine Co. No. 1 operated from the front of the building after withdrawing from the ladder.

Upon the arrival of Engine Co. No. 2, it was placed at hydrant No. 9 and a single line laid to the top of the one story garage. This line operated on the coal pocket and wet down the outside.

Coal Pocket Collapses

After operating for a few minutes with this arrangement of lines, the chief noted the Smith Street wall of the coal pocket bulging and ordered the men to withdraw to a point across the street. They had hardly done so when the front wall gave way and the burning coal was precipitated across Smith Street burying the line from Engine Co. No. 1. Water was shut off from this line, the line was broken, and two additional lengths put on and the company continued to operate from the Smith Street side to wet down the burning coal.

The line at the rear of the coal pocket was ordered to withdraw due to the unstable condition of the rear wall. This line also went to the roof of the garage, after having had to stop to put in two additional sections. The two lines on the roof of the garage operated on the coal pocket, wetting it down.

Shortly afterward the rear wall gave way and the nearest fuel oil tank was enveloped in burning coal. Thereupon both lines operating from the garage roof directed their streams on to this oil tank.

A seam must have opened in the oil tank for shortly after the lines got in operation on it, it took fire. The two lines still operated endeavoring to wet it down and save the other tanks.

The chief ordered a second line laid from Engine Co. No. 1 and Engine Co. No. 2, the line from Engine Co. No. 1 going to the rear of the greenhouse to operate on the oil tank while the other line from Engine Co. No. 2 went to the front of the building to help wet down the burning coal.

Little progress was made in this respect, and soon the street became so hot in front of the coal pocket that the lines operating on it had to withdraw.

A little later two additional oil tanks went up and the lines at the rear had to back away to save themselves.

Garage Involved

The garage, too, soon became involved by fire due to the heat of the burning coal alongside the garage wall. When it became involved, the lines had to back away at a distance and operated at a great disadvantage.

Due to the danger of the lumber yard becoming involved, one line was assigned to cover it at the 10th Avenue side of the yard.

The lines withdrawing from the garage roof took the wet side of the fire, operating on the oil tanks and were apparently holding their own insofar as the fuel oil tanks were concerned. The garage fire began to get hotter and one of the lines from Engine Co. No. 2 was assigned to help cover it.

It looked for a while as if the department would succeed in their efforts to confining the fire to the coal pocket, fuel oil tank, and garage but it was suddenly discovered that the roof of the pumping station was afire. The department had to operate from either side of the pumping station but before any effective work could be done the roof dropped through forcing the employees of the pumping station to flee for their lives with a result that the pumps were soon stopped. This immediately reduced the water pressure in the mains and although there was a plentiful supply for the department for a short while, the pressure was poor.

A shifting of lines to operate on the pumping station left the power house to the west of the fire exposed with the result that the roof of this building, too, became involved.

A complete reassignment of lines was necessary, and a stand was made on John Street to hold the fire from jumping this street to the storage yard. Lines were also assigned to cover the lumber yard and the frame dwelling.

When the fire finally was extinguished it was found that the coal pocket, garage, fuel oil tank, greenhouse, power house, and water works pumping station had been destroyed.

The Editor's idea on the handling of this fire will be given in the next issue of this journal.

Operation of Cairo Department

The fire brigade, or the fire department, as it is called in the United States, plays an important part in the life of Cairo, Egypt. The brigade is well organized and is under the command of Sir Lewa T. W. Russel Pasha who is Cairo Police Commandant.

The department was organized in 1865 with very primitive equipment. The water supply at that time was very poor and water had to be carried to the scene of the fire. Hand pumps were used that were drawn to the fire by horses. In 1880 the Cairo Fire Brigade received its first steam fire engine. This was a great asset and improved the working of the department although the water system was still inadequate and the water was conveyed in carts as in former years.

The Central Fire Station was opened in 1904 and a few years later a number of fire hydrants were installed. Since that time the organization has had a steady growth. Methods have been improved along with the city's improved type of building construction.

(*Continued on page* 115)

Upper—Lord Lloyd Inspecting the Fire Brigade at Headquarters. Lower—Central Fire Station of Cairo, Egypt, with the Apparatus in Front for Inspection

WITH THE EDITOR

"Shake Down" or Shake-Up!

Just at this time, when the general practice among fire departments is to prohibit solicitations for any purpose among their members, the "invitation" to the firemen of Chicago to join Mayor Thompson's so-called "America First Foundation," at the cost of ten dollars per man, is conspicuously brazen. Such solicitation from the authorities amounts to nothing less than a command and is unwarranted and ill-conceived.

It is surprising that the high officials of so important a city as Chicago should be guilty of thus coercing their fire-fighters into contributing to something that the majority of them are opposed to. The thing is all the more reprehensible in that the "request" to join the "Foundation" was made on the firemen's pay day, and was immediately preceded by a shake-up in the police department, following a similar "invitation" made to the police a month ago. It was claimed the policemen were given the alternative of joining the Mayor's "Foundation," or of being sent "to the sticks."

That this police shake-up occurred just at the time the firemen were asked to join appears to be more than a coincidence. Some $65,000 is said to have been squeezed out of the police by the "invitation" and the firemen, numbering 2,600, would add $25,000 to the Mayor's anti-British "crusade."

Altogether, aside from the merits of the case, there is a very vital principle involved in the action of Chicago's Don Quixote. It is the subjection of members of the fire department to mulcting for funds under the guise of "contributions."

It is appropriating the power of the government to intimidating, and thereby forcing public servants into acts that, voluntarily, they need not perform. But what else can be expected from the "boss" rule of the western metropolis?

Fire Apparatus Accidents

There seems of late to have been a marked increase in the number of apparatus accidents in various parts of the country. With the necessarily high speed at which the fire engines travel on the public streets, there is always a certain amount of risk of collision, especially if the drivers of other vehicles are careless or inattentive to the signals of the approaching apparatus. It will be found, if carefully analyzed, that the great majority of these accidents are caused by neglect of proper precaution by citizens.

In most cities, ample warning is given of the approach of the fire apparatus, so that there is very little excuse for such accidents. It is well known by the majority of motorists that the fire department has the right of way, although many drivers think they themselves have it exclusively. In some municipalities drivers are compelled to draw up to the curb and come to a full stop upon hearing sirens of fire apparatus. In others, police officers are signalled of the approach of apparatus along their route and it is their duty to clear the way of traffic.

In spite of all of such precautions accidents to fire apparatus still occur. In the matter of traffic, the human element is particularly troublesome. A driver, on the approach of the engines, may lose his head, make the wrong turn or be guilty of some other error of judgment that may cause a bad accident. This is especially true at the intersection of streets, or in bad curves in highways.

As a general rule the fire apparatus driver is competent, cool and resourceful. He is trained to think and act quickly in emergencies. Many of the most severe accidents, where injury or death has resulted to firemen, have been caused by the courageous action of drivers who have not hesitated to risk the wrecking of the engine and the lives of the firemen on it to save pedestrians from being struck or vehicles and their occupants from collision.

Much can be accomplished by the education of the public on their duties with respect to the fire department, particularly in the matter of approaching fire apparatus. If the idea is made uppermost in the minds of the citizens that the sound of the siren means danger there will be an increase in the exercise of care in this regard.

Soldiers Needed to Guard Firemen

The unusual spectacle of a fire department tackling a blaze while being guarded by state militiamen was presented recently in a Pennsylvania town. The men thus protected were members of the Monongahela Fire Department, and the fire was in three cottages of the Pittsburgh Coal Company at the small mining town of Hackett, Pa.

Whether or not the fire was of incendiary origin is unknown. But the striking miners were determined to prevent the extinguishment of the blaze, as previously the Finleyville Fire Department had to abandon the attempt to put out the fire on account of a savage attack by strikers and their sympathizers. The Monongahela Department was then summoned, and fought the fire under the protection of the state troopers.

Whatever the merits of the dispute between the mining company and its employees may be, there can be no excuse on any grounds for the interference with the work of the men employed to fight fire. Violence in connection with a strike frequently injures the innocent. In this particular case had the fire been permitted

to spread, property of those in no way connected with the disorder would have been destroyed. When the regularly constituted guardians of the city's property against fire are attacked and prevented from performing their duty, the deed is not only a particularly reprehensible one, but is vicious in the extreme.

If an example could be made of those who thus interfered with the orderly working of the fire department in this instance, it is likely that such a breach of the peace would not occur again.

Three Montgomery Firemen Killed

Chief R. E. Nixon of Montgomery, Ala., was injured and three firemen were killed while fighting a fire that caused a $50,000 damage. The firemen lost their lives when the walls of the blazing building collapsed and buried the men under an avalanche of bricks. Because of the intense heat there was some delay in getting the horribly mangled bodies. Chief Nixon suffered a fractured skull, broken leg and internal injuries.

Only a shift of the winds saved the entire business section of the Montgomery Carriage Works from destruction. This is the second major fire that has occurred in the city durring the past six months.

JOHN A. STULB.

Elkhorn, Wis., Buys Fire Apparatus—Elkhorn, Wis., has purchased a Peter Pirsch 600-gallon pumper.

Westerville, O., Purchases Fire Apparatus—Westerville, Ohio, has purchased a Seagrave pumper.

Fire Boat Mascot Trained to Rescue People

"Spider," officially known as the Airedale mascot of the fire boat Dennis T. Sullivan, San Francisco, Cal., has demonstrated time and time again that she is more than an ornament. Several persons and children owe their lives to Spider. Only recently she left her litter of four-day-old puppies to save a man who had fallen into the water.

I. A. F. C. DIRECTORS' MEETING DATE CHANGED

The meeting of the Board of Directors of the International Association of Fire Engineers that was scheduled to be held in Philadelphia, Pa., on February 14 has been postponed to February 28.

CHICAGO FIREMEN ASKED TO AID "AMERICA FIRST FOUNDATION"

Invitation to Join Distributed on Pay Day—Police Asked to Contribute Month Earlier—Police Shakeup Believed Due to Non-Payment

FIREMEN of Chicago were cordially "invited" to support another venture of Mayor Thompson. They were asked to pay ten dollars each as a membership fee to the "America First Foundation." The invitation was not considered lightly by the firemen—in fact the men were trying to read between the lines, for the request came the day that the men received their pay.

Coincident with the drive for members, came the announcement that 395 members of the police department were transferred to undesirable locations. While not definitely known, it is believed that the men were "sent to the sticks," for failure to become members of Mayor Thompson's organization.

With the customary good nature of a fireman, one said: "We should consider ourselves lucky. The police had to pay their fee in one lump sum. We were 'invited' to pay the membership fee in several installments."

There are 6,500 policemen in Chicago and about 2,600 firemen. With most of these men accepting the "invitation" to join the "America First Foundation," the treasury of that organization will be about $90,000 richer.

Clerks and those working in other city departments are beginning to feel uneasy. They believe that they will soon receive an "invitation," through Mayor Thompson's generosity, to join the foundation. Strange to say, few who have received the formal announcement are keen to contribute.

Box 4 Associates Hold Banquet

Many attended the seventh anniversary dinner and entertainment of the Box 4 Associates, of Worcester, Mass., which was held in the Hotel Bancroft in Worcester on January 19.

President Otis C. White presided and the guests included Mayor Michael J. O'Hara, Chief L. McCarthy, Deputy Chief Henry Douglas, Deputy Chief William B. Spooner, District Chiefs Fred S. Taylor, Hiram L. Jewell, Ernest E. Thurston, and Carl J. Kiessling; Carl F. Gustafson, Chairman of the fire committee; Dr. George H. Hill, surgeon; John J. Horgan, clerk, of the Worcester Fire Department; Supt. William H. Guertin, of the Worcester Insurance Fire Patrol; Supt. of Fire Alarms Morey F. Orrell; Capt. Thomas F. Moriarty, president of the Officers' Club, W. F. D.; James J. Harding, president of the Worcester Fire Club; Chief George H. Hill, of the Worcester Police Department; George W. Batchelder, water commissioner; George W. Sherman, superintendent of buildings; Edmund L. Sanders, president of the Worcester Protective Department; George F. Booth, publisher of the Telegram and Gazette; George T. Richardson, editor of The Evening Post; and P. Hildreth Parker, president of the Box 52 Association, of Boston.

The program included musical selections, speeches, and motion pictures of the New York Fire Department. Chief McCarthy, of Worcester, praised the aid and co-operation given him by the Box 4 Associates.

HARRY BELKNAP.

Coates of Tillamook Ore., Resigns—Thomas Coates, chief at Tillamook, Ore., for the past ten years, has resigned from the department. He is vice-president from Oregon in the Pacific Coast Fire Chiefs' Association and secretary of the State Fire Chiefs' Association.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Fire in Tank Wagon

To the Editor:

The company of which I am a member responded to a fire a short while ago in a gasoline tank wagon, consisting of three compartments.

The tank wagon was being loaded from a storage tank situated in the yard; the pipe conveying the gasoline from the storage tank was placed in the top opening of the forward compartment.

The two rear compartments were filled with gasoline and securely capped at tops. The fire occurred from some unknown source, in the forward compartment which was being filled with gasoline.

A discussion came up among the members of the company as to the best method of fighting this fire. Fireman "A" says that two water lines should be used to cool the tank, thereby preventing an explosion, and let the gasoline in the forward compartment burn itself out.

Fireman "B" says that foam should be used in the fire.

Fireman "C" says that the fire should be smothered out with burlap bags wet with water, or a blanket.

We, as readers of this magazine, would appreciate your views as to how this fire should be fought.

W. D.

Answer: The use of foam is from all angles the most satisfactory manner of handling the fire you describe. Properly applied, foam will smother the fire out in the tank wagon and thereby prevent explosion of adjoining tanks.

On the other hand, if the foam is slow in arriving, it would be well to cool the adjacent tanks down with water streams until the foam is ready to apply.

The method suggested by fireman "C" would be satisfactory if foam were not available although it would be quite dangerous to operate at close range—sufficiently close to apply the burlap bags to smother the fire out. Water streams are satisfactory for use at oil fires to prevent exposed tanks heating up and many an explosion has been prevented by judicious use of such streams. As noted above, however, foam is the most satisfactory method of extinguishing oil fires and should be used at first if available.

Exterior Standpipe

To the Editor:

We have a new eight story hotel in our city that is equipped with a very small standpipe and which is supplied with a storage tank, but has no pumper connection on the outside of the building. Small linen hose is used. This is not a very likely looking outfit to me, but it was installed when the hotel was built.

A new addition is to be built to this hotel which is to be nine stories, and will be as large as the original building. A roof garden is to be over the whole top of the building.

I would like to have standpipe installed that would be large enough to be of some use to the fire department so that we could work from the inside of the building, hooking up to the standpipe connections if we had to do so. Would it be practical to install a six-inch standpipe with pumper connections on the outside of the building, and 2½-inch hose fittings on each floor; not using the supply tank on the roof of the building.

I want to get my plans in shape at an early date to submit to the architect and would appreciate whatever information you can give me on the above.

W. T. B.

Answer: As to the practicability and desirability of placing a standpipe on the outside of a building, the following may be said: A standpipe so exposed cannot be kept charged with water due to the probability of freezing. If it is not charged with water, and not provided with connections together with hose for use by occupants of building, the standpipe would lose the greater part of its effectiveness. Many fires have been checked by prompt use of standpipe systems by occupants of building and to make this standpipe available only for fire department use would tend to create faith in something which would be available only for operation after the fire department rolled in.

In other words, no additional means would be provided for those on the spot handling a fire but, instead, equipment would be made available only for the fire department to use after it arrived. This would make probable a greater extent of fire in case such should start.

A four inch inside standpipe is satisfactory for buildings not exceeding 150 feet in height. The number of such standpipes should be such that all parts of each story are within the reach of at least one stream supplied by hose not exceeding 100 feet in length. Thus it is quite likely that a single standpipe (four inch) would serve the building in question (the dimensions not being given in your letter).

While standpipes smaller than six inch have been used on the face of buildings, such use is more of a makeshift than anything else. The four inch inside standpipe on the other hand would serve both the fire department and the occupants of the building.

Any inside standpipe should be provided, as you are probably aware, with a dependable source of supply which would function until the arrival of the fire department. In other words, a roof tank, a pressure tank or house pump should be available to supply the standpipe until the fire department arrived and connected to the siamese connection at the sidewalk; two of such sources would be far better than a single one.

Such a four inch standpipe would be fitted with outlets on each floor, such outlets to be 2½ inch. Hose would probably be of 1½ inch diameter with proper reducers. This arrangement would make available the small hose for use by occupants of the building and also have immediately available 2½ inch connections for use by fire department hose.

It is the writer's opinion that it would be of little value to run a standpipe on the outside of a building for use by the fire department only and having no source of water supply to serve it—except that provided by the department.

Nozzle Pressures and Flows

To the Editor:

A fire boat is operating at 200 pounds pump pressure, pumping through 300 feet of 3½-inch hose into a two-way siamese connection from which are taken two lines of 2½-inch hose equipped with 1¼-inch nozzles. One line is stretched up front of a building to the 6th floor and the other line taken to the rear of the first floor.

What is the pressure at each nozzle?

What is the flow from each nozzle?

Please outline in detail.

J. S. J.

Answer: The solution to your problem would be as follows: Assume an average elevation of the two nozzles. This would be found by adding the two elevations together and dividing by two. The nozzle on the sixth floor may be said to be 60 feet above the nozzle on the ground floor. Both of these nozzles are assumed to be about two feet above their respective

floors and as the outlet on the engine is about the same height, these elevations above the two floors need not be considered.

As the two elevations added together give 60, the average elevation is 30 feet. In other words it will be assumed that both nozzles are at a point 30 feet above the engine outlet.

Then average the two lines: $200 + 300 \div 2$ gives 250 feet average length. Combine your lines into a single line of 2½ inch hose: $250 \div 3.6 = 70$ feet (approximately) of 2½ inch hose. 300 feet of 3½ inch hose divided by 5.8 gives 51.7 or approximately 52 feet of 2½ inch hose.

The total layout is then equal to $70 + 52$ or 122 feet of 2½ inch hose.

The two 1¼ inch nozzles combined are equivalent to a single 1¾ inch nozzle.

Then, assuming the layout to be equivalent to a single stretch of 2½ inch hose 122 feet long equipped with a 1¾ inch nozzle, we solve for nozzle pressure as follows (remembering that the effective pressure at engine is 200 pounds minus back pressure, 13 pounds):

$$\text{N. P.} = \text{E. P.} \div (1.1 + \text{K} \times \text{L})$$
$$\text{N. P.} = 187 \div (1.1 + .907 \times 2.44)$$
$$= 187 \div 3.315, \text{ or approximately } 56\tfrac{1}{2} \text{ lbs. nozzle pressure.}$$

Now there are two ways of solving the balance of the problem. One would be to find the discharge or flow through the line with a single 1¾ inch nozzle and 56.5 pounds nozzle pressure. Then with this flow, calculate the friction loss in the lines from the engine to the siamese. Subtracting the friction loss from the engine pressure would give the pressure at the siamese. Assuming then that the siamese pressure is the engine pressure, the nozzle pressure on each line could be determined by the usual method.

But a shorter method, and approximately correct, in view of the fact that the problem the whole way through is only approximate, is to make correction in back pressure for the two nozzles. The nozzle on the 6th floor would be 30 feet above the point of average elevation. Thirty feet represents $30 \times .434$ or 13 pounds approximately, pressure.

The pressure at the nozzle on the street floor would then be $56.5 + 13$ or 69.5 pounds, while the nozzle on the 6th floor would be $56.5 - 13$ or 43.5 pounds approximately.

The flow from each nozzle may readily be determined by use of the formula discharge $= 30 \times \text{d} \times \text{d} \times \text{d} \sqrt{}$ pressure.

Fire Truck Wrecked to Save Child

Quick thinking by the driver of Ladder Truck 52, New York city, saved the life of a ten-year old child who had rushed into the path of the oncoming apparatus.

The apparatus swerved onto the sidewalk but because of the icy pavements could not regain the road. The driver was

Ladder Truck Suspended on Wall After the Accident

forced to take the chance of driving the machine over an embankment where there is a fifty foot drop to the tracks of the subway system. The apparatus skidded and the driver realized that he was unable to stop the machine. He jumped and shouted to the others who also jumped without any material injury.

The machine hung over the embankment and swung like a pendulum with the wind. Emergency squads from the fire and police departments worked for hours trying to free the machine. They were successful.

Chief Barnett of Atlantic City, Dead

Chief John J. Barnett of Atlantic City, N. J., died at his home at the age of sixty-one, following a two weeks' attack of pleuro-pneumonia. Before he was confined to his bed, he complained of feeling tired and of a cold. His associates thought that he would surely be back at his old post within a few days, but he never returned.

The Late Chief John J. Barnett

Chief Barnett was a resident of the city for forty years. He was born in Burlington, N. J., on October 5, 1866. When his parents moved to this city, he drifted around to various jobs and finally joined the fire department on April 19, 1886. At that time the organization was a volunteer one but he became a paid fireman in 1902.

In 1917, he was one of three members to be sent to the New York Fire College for a complete course. When the chief of the department retired June 1, 1919, Barnett was appointed to that office. Due to his efforts, a drill school was started in 1923.

He was a member of the K. of C., B. P. O., Elks, Moose, New Jersey Fire Chiefs' Association, I. A. F. C., and the Chamber of Commerce.

At his bedside, at the time of his death, were three sisters and a brother. Chief Barnett had never married. The body rested in state at the Elks' Club previous to burial.

Further Details on Impostor

Chief George M. Mantor, of the Seattle, Wash., Fire Department, has sent out a letter of warning against a man who is going about the country representing himself variously as chief, assistant chief, captain, etc., of the fire department of that city. An account of the activities of this man was published in the last issue of FIRE ENGINEERING. Chief Mantor's letter is as follows:

"THE CITY OF SEATTLE

"Office of Chief of Fire Department, January 26, 1928.

"*Chief of Fire Department.*

"DEAR CHIEF: For your information, and protection against financial loss, the following data relative to one Hans Nomenson, a former member of this Department, is listed:

"This man was interruptedly employed as a pipeman in the Seattle Fire Department from September, 1907, to January 12, 1914, on which date he voluntarily resigned. Since August, 1927, he has been traveling throughout the country, from Havre, Montana, to Wheeling, West Virginia, stopping at the Fire Department Headquarters of various cities en route, representing himself as the Chief, Assistant Chief, Battalion Chief or Captain of the Seattle Fire Department, obtaining money under false pretenses, cashing checks and vouchers that are always returned 'N. S. F.'

"Hans Nomensen was last heard of in Wheeling, West Virginia. He is forty-two (42) years of age, about six feet (6-ft.) in height and weighs approximately one hundred and ninety-five pounds (195 lbs.). He is of German descent and embodies the natal characteristics of that race as regards appearances in that he has a ruddy complexion, face rather heavy and broad, hair somewhat gray and speech is slow and heavy. Puts up a good appearance and talks intelligently on Fire Department affairs; is a World War veteran and belongs to the American Legion.

"It is hard to predict where Nomensen will next appear and it is hoped that the above warning and information will be of benefit to any parties coming in contact with him, and will assist in placing him in the hands of proper authorities. For your further information, below is given his traced signature:

Hans Nomensen

"Fraternally yours,
"GEO M. MANTOR,
"Chief of Fire Department."

Beverly, Mass., Firemen to Get Pay Increase—Firemen in Beverly, Mass., will receive a pay increase of fifty cents a day.

FIREBUG CAUSES BUSIEST DAY FOR WASHINGTON, D. C., FIREMEN

Baltimore Asked to Send 10 Companies—24 Alarms Turned in Between Midnight and Noon—Man Confesses to Starting Two Blazes in City

WITH fire companies rushing all about the city, companies from outside of the city moving in to render aid, Washington, D. C., was worked up to a feverish heat by the twenty-four fire alarms that came in from midnight to noon of January 17. A patient of the psychopathic ward of the Walter Reed Hospital confessed later to setting two of the fires.

Five of the alarms were of the multiple type and made it necessary to call help from Baltimore, forty miles away, and neighboring towns. Baltimore firemen helped to fight two of the big fires and manned many of the fire stations so that the men there could respond to alarms. Incidently, Baltimore paid a twenty-four-year old debt for in 1904 Washington helped in fighting the big fire in the neighboring city. Ten companies, an ambulance and several deputies made the trip from Baltimore on a special train.

Most of the damage was done at the Woolworth's store at Pennsylvania avenue between Ninth and Tenth streets northeast. This was the first alarm and came after midnight. Some produce stores also started to burn. Both places were close together and in the section that calls out many companies on the first alarm. The fire appeared to be of ordinary proportions until a gas main broke and forced the firemen to points of safety. A fifth alarm was turned in for this fire, leaving four companies to protect other sections of the city. Companies were diverted from this fire to fight the produce row fire and to answer a number of false alarms that came in at that time.

All night long, there was the constant parade of fire apparatus rushing to various points of the city. In fact, the city did not see so many fire companies at one time, since the collapse of the roof on the Knickerbocker Theatre some six years ago.

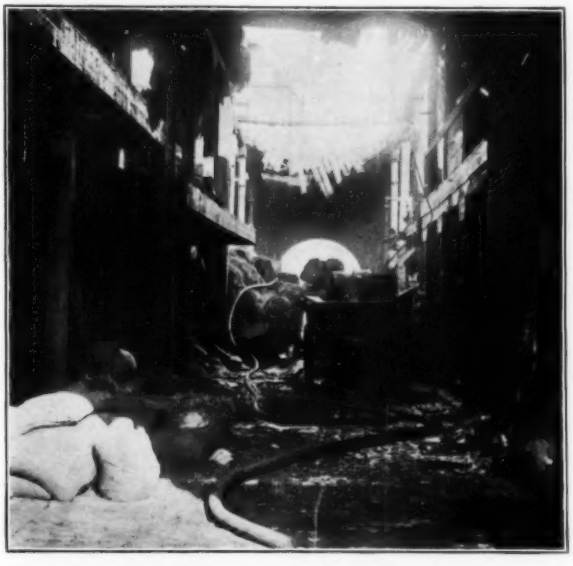
Other fires destroyed a grain warehouse in the northeastern section and a wood-working plant in the northwest. Both fires were labeled as of incendiary origin. Police stationed all available men to try to catch the firebug.

The grain elevator fire broke out about four o'clock in the morning and brought out a three-alarm response. The last fire of the group was under control by five a. m.

By means of license plates, the police apprehended John T. Fisher, a psychopathic patient of the Walter Reed Hospital. When arrested he had a fire badge of Fallsburgh, N. Y. The police in Fallsburgh did not know of anybody by that name.

Five Alarms Were Turned in for This Fire

A supposedly ordinary size fire in Washington, D. C., developed into a five-alarm blaze when a gas main broke and forced the firemen to distant vantage points.



Firebug Confessed to Starting Grain Warehouse Fire

The interior of the Pillsbury Milling Company's warehouse after it had been wrecked by a four-alarm fire. This was one of the twenty-four fires that broke out in Washington, D. C., in a short time.

He confessed to the police that he started two of the series of fires that troubled the department. He admitted responsibility for the grain warehouse fire and the fire at the Lank Woodwork Company.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending January 27

FELTON, ARK.—Warehouse of J. R. Felton destroyed	25
LAFAYETTE, IND.—Purdue University armory damaged	80
DAVID CITY, NEB.—Plant of Imperial Milling Co.	80
MORRISTOWN, N. J.—McAlpin Block damaged	80
TUNKHANNOCK, PA.—Billings Bldg. damaged	30
COHASSET, MASS.—First Congregational Church damaged	25
VALHALLA, N. Y.—Post Office and adj. property	130
DUBLIN, GA.—Home of Judge J. S. Adams destroyed	25
LAKE PLACID, N. Y.—Garage and barns of Stevens Hotel	65
MECHANICSVILLE, N. Y.—Segal Block, N. Main Street	25
LOUISVILLE, KY.—Humbert Bros. So. 5th St.	50
MANISTEE, MICH.—Larson Block destroyed	130
BROOKLYN, N. Y.—Musicant & Cantor Lumber Yard	40
CRAWFORD, NEB.—Business establishments damaged	30
BOONVILLE, MO.—Reformatory hospital damaged	40
SANFORD, ME.—Sanford Candy Kitchen and apartments	30
NEW BRUNSWICK, N. J.—Crating shed of Armstrong Corp.	50
VERONA, N. Y.—Grange Hall and Verona Hotel	25
WIERTON, W. VA.—Gemano restaurant and adj. property	50
UNION CITY, CONN.—Postoffice and adj. property	80
BERWICK, PA.—Store of Umberto Fennicchi destroyed	25
AKRON, O.—Dwelling of J. H. Siff damaged	25
LENA, MISS.—School building damaged	25
LAKE CHARLES, LA.—Bldg. of Plauche Locke Security Co.	25
ELIZABETHTON, TENN.—Morrell's Dept. Store	80
WARTRACE, TENN.—High and Grammar School bldg.	25
PARKERSBURG, W. VA.—Ben Nathan's store	60
BRISTOL, TEX.—Bently Drug Store and adj. property	30
ROCHESTER, N. Y.—Zimmli Office Furniture Bldg.	250
HULL, QUE.—Parc Royal destroyed	25
MEMPHIS, TEX.—Property of Woodbridge Lumber Co.	25
HUNTINGTON, W. VA.—Bldg. occupied by Carson Battery Co.	80
PICKFORD, MICH.—Business block destroyed	80
ELKO, NEV.—Owl Cigar Store and Rex Pool Parlor	25
DETROIT, MICH.—Warehouse of Woodward Furniture Co.	40
HILLSBORO, O.—Two blocks of property destroyed	375
HAYNESVILLE, ALA.—Store of F. B. Leatherwood Co.	25
DANVILLE, ILL.—Several business establishments	40
MARION, IND.—Property of Indiana Mfg. & Elec. Co.	250

(*Continued on page* 116)

ASBESTOS TUBES DEVELOPED FOR FIGHTING OIL FIRES WITH FOAM

Foam Used as Early as 1914 by Standard Oil Company—Tests Made by Oil Company for Better Tube and Mixing Device for Foam Liquids

By CHARLES W. GEIGER

SUDS, froth or fire-foam, they are all names for the same thing, were used as early as 1914 by the Standard Oil Company of California to protect their plants against the spread of fire. Since a number of tests conducted by the company, all of the key plants of the company have been protected by the foam system. As a result, during the past five or six years, there have been only two large fires on which foam was used.

One of these was at a distributing plant on Puget Sound. A tank at this plant was being cleaned preparatory to making some

Gasoline Fire That Destroyed Standard Oil Plant on Puget Sound

repairs, and when almost the last trace of oil had been removed, it was ignited by some undetermined cause. There was only a brief flash from the small amount of vapor remaining in this tank; but this was enough to ignite an adjacent tank, the roof of which had not yet been made gas-tight. This tank was nearly full of gasoline—containing a little over two million gallons. The well trained crew at the station had the foam valves open in less than five minutes. Despite a high wind, which was fanning the flames in the direction of other tanks at the plant, the fire was definitely under control ten minutes later, and was completely extinguished twenty-five minutes after the alarm had been sounded.

This single experience, returned a good portion of the company's investment in foam systems; and considering the high wind and consequent hazard of nearby tanks, it is not unlikely that this brief half-hour's use of the Point Wells foam system avoided a loss which might have been greater than all that has been spent to date for these systems at all company plants.

Experiences at El Segundo, Cal.

The other case was at the Company's El Segundo Refinery a little over a year ago. A 115-foot diameter tank, about half full of engine distillate, was ignited presumably by a static spark. Here again the foam system was brought into action a few minutes after the fire started; and the indications were that the fire would soon be out. However, after making considerable headway, the progress of the foam blanket seemed to falter. It was noted that the mixing box where the two chemical solutions are brought together had been tippled over at quite a sharp angle when the roof blew off this tank, and it was suspected that this might account for the apparently difficulty in bringing the fire under control.

The solutions were therefore temporarily shut off, and so-called portable mixing-tubes were brought up to the tank. These portable mixers are emergency equipment developed for just such a situation—to provide a means for putting foam into the tank when the regular mixing box has for some reason or other been damaged or put out of commission. The foam delivered through the portables also made considerable progress against the fire; but in spite of the fact that enough foam to cover the whole tank with a blanket three and a half feet deep was pumped in, the fire for some reason could not be brought under control.

After the fire had burned itself out, a thorough investigation was made to determine the reason for this very unusual failure. As no rational explanation could be found, it was decided to use the remains of the tank for making some full-scale tests. In the first test, the mixing-box was mounted twenty feet above the oil, and cocked over at an angle just as it had been at the actual fire. For half an hour after the solutions were turned on, it looked as if the experience at the original fire was about to be duplicated—that is, that the small amount of oil placed in the tank for the test would have to burn itself out. Finally, however, after the pumps had been speeded up to the maximum rate of delivery available from the refinery system, the flames began to subside; and fifty-eight minutes after the start of the fire they were out. It had been a long hard struggle, and 33,000 gallons of each foam solution had been required to extinguish the fire.

Box in Lower Position

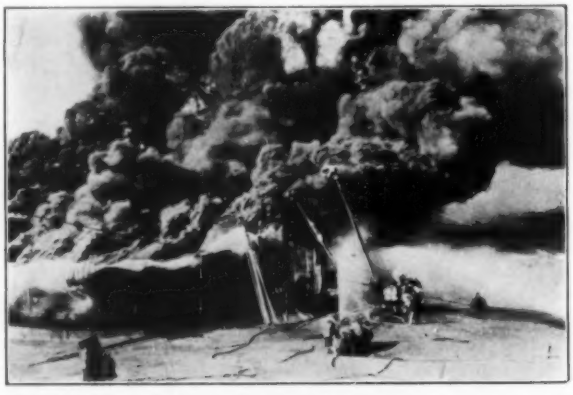
The test was repeated, except that this time foam was delivered from a box mounted only three feet above the oil level. With this arrangement, the fire was extinguished in thirteen minutes with a total of 8,400 gallons of each solution—only about one quarter of what had been used when the mixing-box was twenty feet above the oil. This confirmed suspicions that the difficulty in the original fire, and in the first test, had been the fact that foam dropping a long way onto the oil surface splashed so violently into the oil that it became oil-saturated, and thus lost most of its effectiveness.

It was realized that there might be other fires where conditions would be similar to that in this tank—with the oil level fifteen or twenty feet below the top—and that some means should be devised to effectively cope with such conditions. Various schemes were suggested for placing floats or baffles, under the mixing-boxes to break the fall of the foam; but the installation of such equipment in every tank protected by foam systems would involve a heavy expense and a long delay—for Company tanks are needed so constantly that it is difficult to find time to empty and clean them for the installation of new equipment.

Fireproof Extension Tube Planned

A study of this problem by the company's consulting board of engineers led to the suggestion that some form of fireproof extension tube be devised to be hung on the end of the portable mixers. Such equipment would be available for use on any tank, no matter what the oil level. It proved to be no simple task to design a tube which would be light and flexible enough to coil up compactly on the end of the portable mixer when the latter is being erected over the side of the tank. This tube would have to resist the intense heat of the flames into which it is dropped as the nose of the portable mixer is placed over the tank shell, and sufficient mechanical strength was necessary to stand the sudden rush of solutions when the foam is first turned on.

A long series of tests was run to find equipment which would meet all these severe requirements. Demonstration of the improved equipment were made in the remains of the same 115-foot



Portable Mixer With Asbestos Tube Coiled on Top Ready to Fight Fire

tank at El Segundo. Gratifying success was obtained by this system.

In the final tests of this equipment, the fire was extinguished with 3,300 gallons of each solution,—just one-tenth of the amount that had been used to extinguish a similar fire, with the mixing box twenty feet above the oil surface. Furthermore, the rate of delivery of solutions to the mixer was only about one-third the rate that had been required in the earlier tests.

It is very clear from these results, that the new type of equipment which completely breaks the velocity of the foam and allows it to flow gently out over the oil surface, marks a decided advance in the use of foam. So far as known, no tank fire of this size has ever been put out with less than twice the amount

of solutions required in the recent El Segundo demonstration. And for a situation where the oil level happens to be many feet below the top of the tank, this new type of equipment may not only mean prompt and more effective extinguishment; it is very likely to mean the difference between failure and success.

Tube Reduces Cost of Installation

The asbestos tube is not only a useful and valuable auxiliary to present foam systems but it may be possible to design and install efficient new systems at a fraction of the cost previously necessary. With this more efficient method of application, smaller amounts of solutions will have to be kept in storage, smaller lines and pumps can serve to distribute the solutions throughout the yard and in many cases the fixed mixing boxes on the tanks can be omitted entirely.

Since protection against fires is a matter in which the Standard Oil Company of California has always been glad to co-operate with other members of the industry, this company will allow other oil companies to use this process free of charge.

A set of drawings and permission to build the equipment described will be furnished upon application to Mr. H. H. Hall, Chief Engineer, Standard Oil Company of California, San Francisco, Calif. If more than one set of drawings is required, these will be furnished at a nominal charge. Any well-equipped sheet-metal fabricating shop can build the portable mixers.

STATIONARY FIRE PROTECTION METHODS USED IN GERMANY

Illustrations of Devices Used to Protect Buildings and Some Large Machinery Installations—Resembles American Sprinkler Systems

By JOHN H. D. BLANKE

J. Brand, Muenich, discusses in the "Zeitschhrift des Vereines deutscher Ingenieure" of June 4, 1927, pp. 835–836, some of the applications of stationary fire protection equipment which is used in Germany. The drenching or rain-wall equipment is less known in that country. Its application is illustrated in Fig. 1. The drenching sprays are located above each window. During a fire these sprays are placed in service by opening a valve. The system is shown in operation in Fig. 2. In order to meet the large requirement for water, a storage tank is placed overhead, or an air pressure tank may be used.

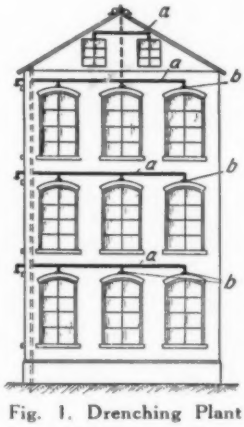


Fig. 1. Drenching Plant

a. Piping; b. sprays.

Very high and large rooms are equipped with rain making apparatus as is done in theaters. The main valve is located outside of the danger zone. The water is sprayed from copper tubes which are perforated to one-third of their circumference, or from valveless sprinkler sprays. For long pipe lines a feed supply is arranged at both ends. Recently this system has also been applied to benzine or gas tanks.

Closed-in rooms may be protected with steam. This, however, requires a steam generating plant which must be kept under pressure for instant service. The system has proven satisfactory for extinguishing fires in the coal bunkers of steam operated ships. There is also the possibility of filling the hollow space in liquid storage tanks with steam in case of fire.

In some cases neither liquid nor solid fire preventatives are desirable. Carbonic acid gas has proven desirable, as for instance in the protection of electric generators, as shown in Fig. 3, which illustrates the fire protection system of the generator at the Walchenseewerk hydro-electric power plant. There is a breaking strip (a) on each switchboard. As soon as this is disengaged, the fire dampers (b) and (c) are closed automatically. At the same time the cord (d) opens the valves of a battery (e) containing carbonic acid flasks. Thus the cooling duct (f) of the generator is quickly filled with a fire-preventive gas and the fire thus extinguished.

In connection with this illustration it is of interest to know of the results of testing various insulating materials in electrical machinery in many fire-preventative gases and mixtures of gases, as reported in a recent issue of the *Siemens-Zeitschrift*. Engineer Fritz Liebscher of the experimental station in the dynamo works of the Siemens-Schuckert-Werke reports the following results in summary in the article, "Protection of Electrical Machinery Against Burnouts."

For protection of electrical machinery equipped with circulating cooling against burnouts, a very rapid decrease in oxygen in the cooling plant by the introduction of inert gases is recommended. This is best done by injection of the liquid carbonic acid. Cut off valves are used to cut the machine off from the balance of the cooling plant in case of necessity.

Tests have shown that the independent combustion of insulating material (cotton strips, excelsior strips, paper, shellac) is impossible when the gas contains only 14 to 15 per cent oxygen. In order to reduce the oxygen percentage from the 21 per cent to 14 per cent, that is one-third, one-third of the air chamber volume must be replaced by the injected gas. This requires a gas volume equal to one-half of the air chamber volume. More

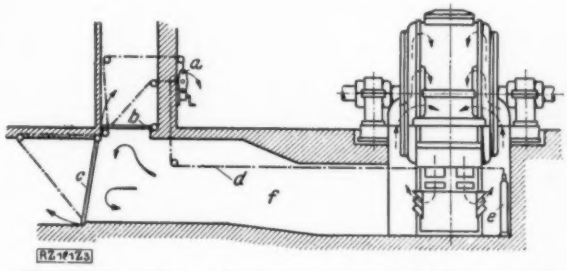


Fig. 3. Protecting a Generator at the Walchenseewerk

a. Breaking cord; b. and c. fire dampers; d. cord; e. carbonic acid flasks in battery; f. cooling duct.

gas is required if the cooling plant leaks; less gas is required if the flow of gas which is poor in oxygen, is increased.

From 90 to 120 grams of insulating material burned in one cubic meter of air. The use of carbonic acid as a fire extinguisher has, as compared to nitrogen gas, the advantages of more rapid expansion in the machine, less demand on the compressed flasks in storage, less cost and easier availability. The

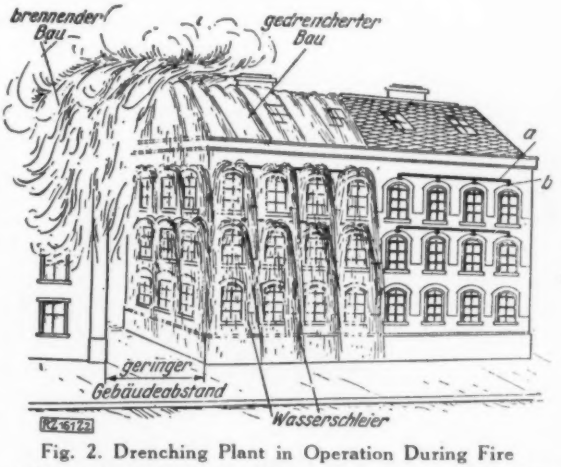


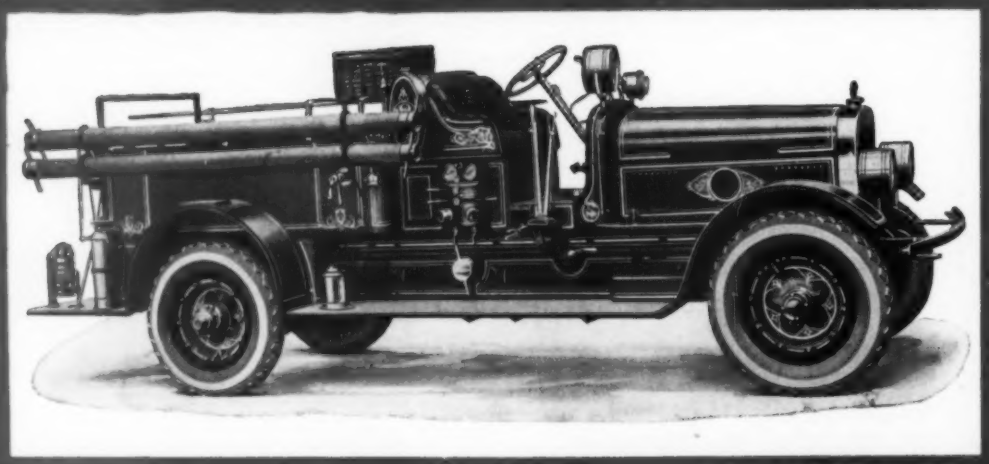
Fig. 2. Drenching Plant in Operation During Fire

a. Piping; b. sprays; Wasserschleier—water curtain; brennender Bau—burning building; gedrencherter Bau—drenched building; erginer Gebaeudeabstand—short distance from buildings.

full enclosure of electrical machinery and cooling in view of the above results will insure against burnouts due to short circuits.

In high speed combustion engines the essential danger of fire is located in the carburetor. Various stationary fire prevention equipment is available for these engines. Fig. 4 shows a carburetor of a motor vehicle equipped with a rain maker. The tank (a) contains a fill of metyl-bromide with a pressed-on nitrogen buffer as the driving mechanism. After the handwheel (b) is opened, the extinguisher flows through the pipe line (c) to the carburetor (d) to extinguish the fire. Besides the Tetra, an extinguishing powder may also be used. As shown in

SEAGRAVE Apparatus



And now—
Seagrave Apparatus with Fomon

Foam—the master combatant of inflammable liquid fires—constantly assumes increasing importance with the increased use of automobiles and oil burners.

Seagrave initiative now makes available for Seagrave apparatus the Fomon Continuous Foam Generator using Fomon Twin Dry Chemicals as the ultimate safeguard in fire protection.

There is a Seagrave unit for every purpose and every unit may be Fomon equipped. Seagrave apparatus, Fomon equipped leaves no hazard unprovided for. Fomon equipment and chemicals suited to the need are furnished by the American Fomon Company.

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Again—Recognition of Merit

Fomon Foam Generators for Seagrave Apparatus

Fomon equipment is today's symbol of up-to-date apparatus.

Fomon Foam equipment gives complete protection both against ordinary fires and inflammable-liquid fires with a minimum of water damage. One gallon of water combined with Fomon chemicals makes a maximum amount of dry foam, for Fomon chemicals need no inert fillers for checking deterioration, since Fomon twin chemicals are separately packed.

Replacing old-time dual-tank liquid foam solutions, which emptied all too soon and then were useless, Fomon provides continuous production of foam as long as water and chemicals are available. And the Fomon principle of two segregated dry chemicals avoids any possibility of chemical action while stored, is its own protection against deterioration, and assures 100% foam producing qualities, free from all inert fillers.

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"Fomon — Fire Out"

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CHICAGO—BOSTON—LOS ANGELES—
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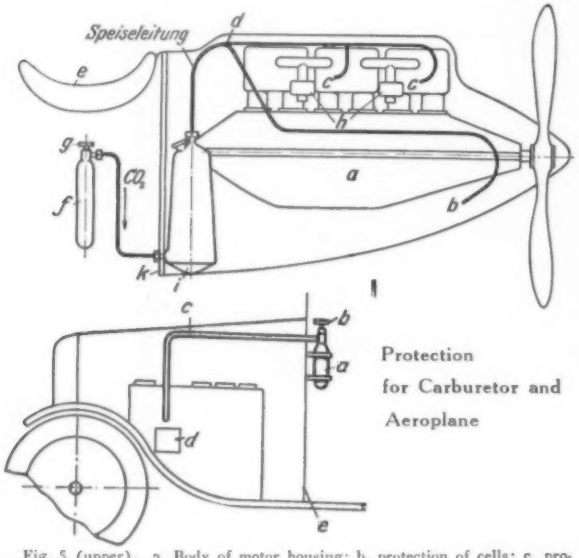
The Fomon Generator (Fire Dept. Type)

The Fomon Foam Type Fire Department Extinguisher designed to be carried on fire apparatus.

Fig. 5, an extinguisher supply line is also placed below the motor housing in the case of airplane motors.

Large benzine or gasoline tanks are protected with foam flooding. In a building which is isolated from the gas station, there is a cylindrical tank which contains dry chemicals for the production of carbonic acid foam. In case of fire, water passes through the apparatus to dissolve the chemicals. The foam flows from a circular rain attachment from the top of the tank downward. Thus each tank is covered with a protecting, cylinrical veil of fire extinguisher. Often the work is assisted by



Protection for Carburetor and Aeroplane

Fig. 5 (upper). a. Body of motor housing; b. protection of cells; c. protection of carburetor; d. forked joint; e. pilot's seat; f. flasks with liquid carbonic acid; g. valve hand wheel; h. carburetor; l. tank with extinguishing powders; k. instrument frame.
Fig. 4 (lower). a. Gas pressure spray; b. valve handwheel; c. rain pipe line; d. carburetor; e. spray wall.

vapors of steam or carbonic acid. More recently the extinguishing method which operates with carbonic acid snow is becoming popular for protection of tanks.

Southeastern Chiefs Appointed

The Southeastern Fire Chiefs Association, a section of the International Association of Fire Chiefs recently appointed members to the various committees. The officers of the section are as follows:

Chief J. T. McNulty, St. Petersburg, Fla., president; Frank E. Donnald, Greenville, S. C., first vice-president; D. B. Copeland, Columbus, Ga., second vice-president; H. E. Whitener, Hickory, N. C., secretary, and Donald White, Florence, Ala., treasurer.

The executive committee consists of W. B. Cody, Atlanta, Ga.; chairman, C. C. Meador, Roanoke, Va.; C. C. Hawkins, Georgetown, Ky.; L. B. Hill, Bessemer, Ala.; Frank E. Donnald, Greenville, S. C.

W. D. Brosnan of Albany, Ga., is chairman of the exhibit committee. The other members are A. L. Duckett, Asheville, N. C.; W. H. Palmer, Charlotte, N. C.

The transportation committee consists of H. R. McMillan of Jacksonville, Fla., chairman and John B. Kennedy, Augusta, Ga., and Jim Aikin, Birmingham, Ala.

John Monroe is chairman of the credential committee. The two other members are J. S. Stephenson, Miami Beach. Fla., and J. T. Moore, Memphis, Tenn.

The auditing committee consists of Sam Boyd, Knoxville, Tenn., chairman, A. P. Sadler, West Palm Beach, Fla., and H. E. Nissen, Winston Salem, N. C.

A meeting of the cabinet of this association was held in Atlanta, Ga., on January 24.

Charlestown Veterans Hold Dinner—The Charlestown Veteran Firemen's Association held a banquet on New Years Eve. District Chief Philip A. Tague of the Boston Fire Department presided at the dinner and the entertainment which followed.

SOME MORE FIGURES ON THE WORK OF THE NEW YORK FIRE DEPARTMENT

Statistics on Fire Department Made Public Through Chief Kenlon's Office—Quantities of Fresh and Salt Water Used in Fire-Fighting

By WILLIAM JEROME DALY

SINCE recent publication of the estimates of the statistics of the Fire Dept. for the year just ended, Chief Kenlon's office has issued the official and detailed report, part of which is not only enlightening but interesting to the fire force, especially those captains and chiefs who will soon enter the promotion examinations for battalion chief and deputy chief of department. Minute reports on losses indicate $19,685,215 for the year 1927, or a reduction of only $1,986,520 under the year 1926. There were actually 30,827 alarms and 24,341 fires of which 14,715 were in buildings, 147 in vessels and 9,479 were miscellaneous. Manhattan, although fifth in area and second in population, had the most alarms and the most fires. There were more fires between noon and 6 p. m. than in any other quarter of the day.

Fires were extinguished as follows: without any stream 12,090, one stream, 8,858, two or three streams 1,305, more than three streams 268, sprinklers 337, with 1 high pressure stream 1,181, with two or three high pressure streams 200 and more than three high pressure streams 102. Fires confined to point of origin 21,965, confined to the building 2,023, extended to other buildings 353. Of the 30,827 alarms, 3,830 were verbal, 20,671 were by street alarm box, 5,784 were special telegraph, 542 were automatic.

The losses by boroughs are; Manhattan $9,684,015, Brooklyn $5,366,250, Queens $1,959,435, Bronx $1,371,125 and Richmond $1,304,390. The number of fires per one hundred structures 3.78, fires per 1,000 population 4.08, loss per capita $3.30, confined to the point of origin 90 per cent. Water used in fire fighting was 57,105,510 gallons of fresh water and 21,746,071 gallons of salt water.

The 44th battalion in Brownsville, Brooklyn, leads the list of districts in which fires occurred, with 1,174 for the year, the 12th battalion in Harlem is next with 1,040, the 10th battalion in Yorkville is next with 958 and the 9th battalion in the theatrical district is next with 919. The Marine battalion had the least, 218, while the lowest battalion ashore was the 1st with only 270. As usual the great bulk of fires had their origin in cellars in both the old law and the new law tenements, with kitchens and bedrooms in order following.

A survey of the type of buildings in which fires occurred last year discloses among those with the least number of fires the following: asylums and homes 15, auto repair and service stations 65, buildings in course of construction 246, churches 53, club houses 32, hospitals 26, private schools 25, public schools 19, department stores 15, theatres 48, motion picture houses 64, stables and barns 54, lodging houses 7. The fireboats responded to three fires in the state of New Jersey at which they used 2,281,960 gallons of water.

Chief Francis Is Praised for Work

Chief Harry J. Francis of New Brunswick, N. J., was praised by Director Baier and officials of the Armstrong Cork plant for the able manner in which he directed the extinguishment of a blaze in a building of that company.

The director said, "I have been a member of the Commission for eight months and when I took office, I was told of the type of men in the department. I was told that Chief Francis was a fearless fire fighter and a capable executive. I have watched his work and I am proud to say that everything good that was said about him is true.

"I wish to personally tell Chief Francis what I think of him, in public. I want to tell him that he is deserving of no small amount of praise for the manner in which he personally directed the work of the fire department."

Kenneth Robbie, superintendent of the Armstrong Cork Company commended Chief Francis and his men for the good work that they accomplished.

Paducah, Ky., to Relocate Fire Stations—Three fire stations in Paducah, Ky., will be relocated in accordance with the recommendations of Chief John M. Slaughter.

Port Newark, has New Fire Company—A new fire company has been organized to cover the Port Newark section of Newark, N. J. The company consists of fourteen men, two officers with a 1,000-gallon pumper.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

HOW TO ORGANIZE AND FINANCE A VOLUNTEER FIRE DEPARTMENT

Frequent Practice Is Important—Suggestions for an Adequate Fire Alarm System—Department Should Be Conducted Along Lines of Club

By STANLEY COATES
Chief of Fire Department, Burlington, Ont., Canada*

ALL volunteer fire departments should be well organized and should have plenty of men attached to each company. The chief and assistant chief should be men having a good knowledge of the construction of buildings. There should be a captain and lieutenant, for each company, and at least fifteen men. This may seem quite a lot of men for a company, but there are very few occasions when you have your full quota of men at a fire, for the simple reason that the members have different occupations, they may be out of town at the time or do not hear the alarm.

Requirements for Fire Alarm

The alarm system for a volunteer department is of great importance. I believe that an air compressor and tanks, with a very loud and distinct cluster of whistles blown under high pressure is the most efficient. The motor and compressor should work automatically, when the pressure gets low the motor should start and so keep the air in the tanks at a sufficient pressure at all times to operate the whistle. This alarm may be manipulated from the telephone office or from boxes on the street. Eight out of every ten calls come through the local telephone, and you can get very good service if you use a little diplomacy, such as a nice box of chocolates to the operator now and again, or some nice present at Christmas. I have found that this works wonders.

All volunteer fire departments should have a general meeting once a month, where all the members should meet to talk over the business of the department for the better fire protection in the municipality.

There should be an annual meeting of the members in January, and they should elect their officers and committees for the ensuing year. Their officers should be as follows: chief, assistant chief, secretary-treasurer, captains and lieutenants for each company, amusement committee, transportation committee and athletic committee.

Frequent Practice Is Important

Each company should meet at least every week, to hold practice, and get proficient in handling hose and climbing ladders with hose, also taking hose up on a steep roof, and to study the construction of buildings, so that there might be no needless waste in cutting holes and putting a lot of water in places where it is not needed.

Do this practicing when the weather permits, and when the cold and snowy weather comes, try to keep the company turning out just the same, so that they do not lose interest, and drift away. Have them clean the truck and polish up, then have them go to the club room for a game of cards or checkers, or some other amusement that will pass the evening with pleasure. All Volunteer Fire departments should have a club room, where the general meetings should be held, and have amusements there such as card tables or pool tables, where your members can go any night in the week and use it as a club.

Keeping the men busy and interested is a very vital factor in the success of any volunteer department. Organize an Athletic Club fostering baseball, soft ball, hockey, running and other sports, that the firemen are interested in. It is very helpful to have athletes in your fire department. You have to devise methods and means of holding these men together, buy them sweaters and uniforms and finance them for the club.

Have your department belong to the Provincial or State Fireman's Association, or any other association that fosters fire protection, and have them enter the sports that are carried on by the association, either running, ladder climbing, or have a fancy drill team. This association meets in different towns every year. Take all your department to these association meets, and so help to enthuse them, and you will always have men trying to get into your department, which makes for success in your line of endeavor. Your men will enter into fighting fires with the same spirit of competition as they would enter into sports.

You will find that fire fighting with the volunteer fire department is a hobby, and the average man generally pursues a hobby with more vim and vigor than he does his daily vocation.

Financing the Department

Now, then, you will ask how shall we finance this fire department. This is very simple. Have an agreement with your council to allow your men fifty cents per turn out per man for general meetings, fire practices and fires, whether they be one or five hours duration. By having the same amount for practice and general meetings as for fires will tend to help the men turn out to practice, to keep the finance of the department in good shape and at the same time encourage the men to become more proficient in the work of fighting fires. You must have a secretary for your department whose duties it would be to tabulate at roll call all the firemen who are out at meetings, practices, or fires and render this account every three months, or quarterly, to the municipal council. Let the money so earned be placed in the department funds, and so go to defray the expense of your athletic club, and give your members a supper or dance. Now and then put on a garden party or concert, and help to raise funds. Approach your council for a grant about the time of the association meet and you will be surprised how your funds will mount.

Now, if you tried to hire men to turn out to fight fire for the paltry sum of fifty cents you certainly would have a hard time of it, but if the money is placed in the department funds, you will find that your volunteer department will be a great success and a credit to the municipality.

In conclusion let me impress upon you that in order to have a live department in any town or village, it is essential that you have wide-awake, progressive officers,

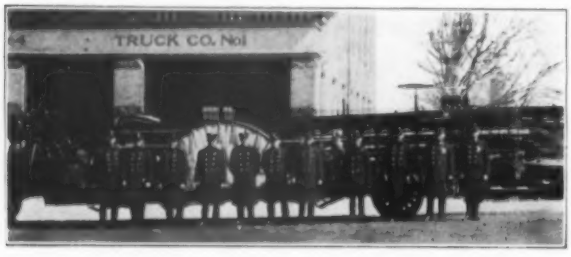
* Paper delivered at Thirty-Eighth convention of Vermont State Firemen's Association, St. Albans, Vt.

also men to handle the equipment that will work in unity and harmony, and have the best interests of the community at heart; then success is assured.

Cutting Blowpipe Aids Firemen

In this era of structural steel construction, fire companies are finding that new and modern fire fighting equipment must be installed in their trucks. The axe, which has given long and useful service, is no match for steel barriers.

Fire fighters would indeed be up against a great obstacle if a new and portable means of combating steel obstructions were not available. Fortunately such a means is available and is already being widely used. In the last few years the oxy-acetylene cutting blowpipe, together with the attendant oxygen



Truck Company of Wilmington, Del., Equipped with a Cutting Blowpipe Outfit on the Running Board.

and acetylene cylinders, hose, and regulators have been installed by a great many fire companies in larger cities.

Fire doors are easily cut away, girders, grilles, and other metal obstructions are severed in quick order. The cutting blowpipe has supplanted the axe and hook in dealing with modern construction.

Among those fire departments that have found the oxy-acetylene cutting unit of great assistance is that of Wilmington, Del. The crew and equipment of Truck Co., No. 1, are shown in the illustration. Attached to the running board next to the life net is the oxygen and acetylene cylinders to which is attached a complete oxy-acetylene cutting unit. Extra long hose is attached. The injector type cutting blowpipe that was selected was chosen because this is the only type of blowpipe which will cut cast iron as well as steel without any special nozzles. This is an important item to a fire company.

Each member of the company is given one hour's practice each week in handling the blowpipe until he has become proficient in its use. When an emergency arises, any available man is able to operate the blowpipe.

Cylinders are attached to the running board by specially designed clamps, or collars, and the entire unit, when not in use, is protected by a canvas cover.

New Coats for Boston Firemen

(*Continued from page* 98)

Overcoats For Privates

Privates—A double-breasted sack overcoat, buttoned to the neck, with six large regulation buttons on each breast placed equidistant vertically; upper button on each side to be at point of collar bone, the spread depending upon size of breast, but it shall not be less than twelve inches, and shall converge downward with revers so that the buttons are not less than six inches apart, horizontally at bottom; buttons on left side shall be countersunk.

Collar—To turn down, four inches deep all around; stand of collar one and one-half inches in rear running to one-half inch in front; to fasten at points of notch with concealed hook and eye; corners of collar and revers to be slightly rounded, but collar shall not cover top buttons.

Revers—The coat shall have revers, front, sidebody and back; the back to be made with centre seam, with vent twelve inches long, having no hook or ornamental stitching at point of vent; revers sewed on.

Length—It shall reach a point two and one-half inches above the knee.

Lining—To be lined with red cloth or flannel, stitched out on padding across front and back three-quarters of an inch apart to waistline, with lining left open at bottom of front.

Pockets—One on inside of each breast and one small inside cash pocket on lower left side, piped in cloth tongue.

Edges and Seams—To be raw edge, with half-inch double stitching.

Sleeves—To be close-fitting, with ornamental fireman's double stitching on cuffs, each cuff having three small regulation buttons.

Fit—Coat shall be cut so as to be slightly form-fitting.

Eyelets—Eyelets for badge will be placed so that the top of the badge will be in line with the bottom of the second button from the top and one and one-half inches to the right.

Overcoats in accordance with these specifications will be issued only when old coats are being replaced.

Cravat

All members—Black silk or other black material of good quality, to pass around the inside of collar and tie in four-in-hand style in front. The width of the cravat shall be not less than 1½ inches and not more than 2 inches. The wearing of bow ties will be discontinued.

HARRY BELKNAP

Fort Dodge Has Low Fire Loss

During the past year, Fort Dodge, Ia., has had the lowest fire loss in ten years according to the annual report of Chief H. J. Callahan.

The annual loss was $39,603 or a per capita loss of $1.60. Three-fourths of the property damage has been covered by insurance. Since 1917 the city's conflagration tax has never been lower than $50,000. Chief Callahan contributes the low loss to constant fire prevention propaganda.

There was no conflagrations during the past year. Damage to buildings totalled $19,380 and to contents, $20,233. Apparatus answered 207 alarms and of this amount, thirty-seven were false alarms.

The largest fire loss for the year occurred in March. The loss then was $19,960. The low point was reached in June with a loss of only $62.

Trenton, Mich. Fire Alarm Completed—The new fire alarm of Trenton, Mich., has been completely installed. Nineteen boxes have been installed.

Blossburg, N. Y., Receives Pumper—A triple combination pumper has been delivered to Blossburg, N. Y. Funds for the purchase were raised under the auspices of the American Legion.

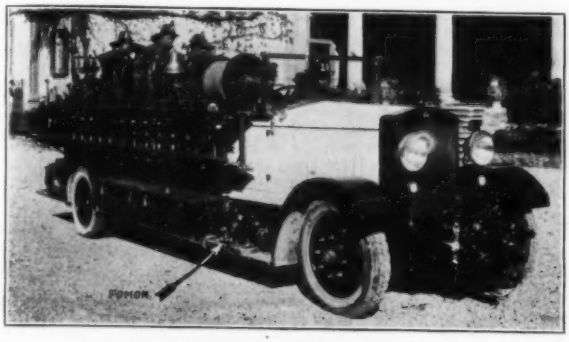
New Central Fire Alarm Station of Birmingham, Ala.

The central fire alarm office of Birmingham, Ala., serves a population of 178,806 and contains the following equipment which was installed by the Gamewell Company. There are five 10-circuit storage battery switchboards, one 14-circuit C. O. storage battery switchboard, three ten-circuit box line relay boards, one 14-circuit box line relay board, one 8-circuit joker board, one 8-circuit gong board, one 60-circuit protector board, a terminal board equipped with one hundred clip fuses, one master clock, recording set equipment, twelve 90-inch four shelf metal battery racks and 2,187 cells F. I. P. battery.

Italian Company Uses Foam Generators

S. I. M. T. Company of Milano, Italy, one of the prominent manufacturers of fire equipment in Europe, report very successful results with the Fomon generators.

The one illustrated weighs three times as much as the present models which have a number of improvements not included in the earlier types. The Fomon generator has passed through a number of successful tests in many European cities.



Fomon Generator Mounted on Running Board of Italian Apparatus

The Italian made apparatus is mounted on Fiat chassis, with the pump placed in front of the radiator. Unlike the American apparatus, this one is equipped with a glass windshield.

Chief Wells of Wethersfield Killed

While standing on a street curb awaiting the approach of his apparatus which was enroute to a grass fire, Chief Stanley Wells of the Wethersfield, Conn., volunteer fire department No. 2, was struck by an automobile on the night of January 20 and died at the Hartford hospital soon after being admitted. Medical Examiner Dr. Henry N. Costello pronounced death due to a fractured skull.

Chief Wells had been at the head of the Wethersfield fire department since it was reorganized three years ago and had been one of the town's most progressive men.

T. F. MAGNER.

Box 52 Association Takes Trip

A party composed of thirty-three active members of the Box 52 Association, of Boston, Mass., two honorary members, and twenty-four guests left Boston in a special car attached to the 5:05 p. m. train on January 18 over the New York, New Haven, and Hartford Railroad for Providence, R. I.

President P. Hildreth Parker was in charge of the arrangements for the trip which took the place of the regular January meeting. Upon arrival of the train in Providence, the party was met at the station by Chief Frank Charlesworth and Honorary Assistant Commissioner George Blivens, of the Providence Fire Department. At the Central Fire Station greetings were extended by Fire Commissioner Elmer S. Cowan, Deputy Chief David A. Bigney, Acting Deputy Chief John H. Hale, Battalion Chief Charles F. Dyer, and Alfred C. Ames, Superintendent of Fire Alarm Telegraph.

By an odd coincidence shortly after the party reached this firehouse an alarm came in from Box 52 for a fire in a motor truck on Eddy Street.

A tour was made of the city in automobiles, visits being paid to fire alarm headquarters and stations of Hose Companies 1, 2, 8, and 23, and of Hook and Ladder Companies 1, 10, and 12, and Water Tower 1. The visitors were introduced to Battalion Chief Alexander McKay and Captain A. J. McAdams.

The party arrived back in Boston at 11:05 P. M. after a most enjoyable trip. Charles A. Turnbull was in charge of transportation.

Among those who went were Bartlett Tyler, George W. Austin, Harry J. Rockett, Frederic Blake, Raymond B. Hemenway, Howard S. Patterson, Frank W. Regan, William E. Dolan, Edward Power, Harry C. Pratt, S. R. Kingman, Everett L. Turner, John A. Molloy, William A. Tighe, Guy R. Merrill, Herbert K. Pratt, John H. F. Connor, C. Elmer Gane, Charles J. Curtaz, James G. Moulton, Albert W. Daniels, Donald H. Kerr, Arthur M. Wall, Theodore E. Grant, George L. Duncan, Clifford Sennott, Laurence J. Phillips, Robert H. Field, F. A. York, Robert E. Fay, Alton H. Blackinton, P. H. Parker, C. A. Turnbull, Assistant Chief Henry A. Fox, of the Boston Fire Department; Supt. Henry Thompson, of the Boston Protective Department; and Chief William H. Hill, of Belmont.

Bill to Prevent Parking of Autos

The following bill to prohibit parking of automobiles in the rear of apartment houses has been introduced in the Massachusetts legislature. It has the endorsement of Col. Alfred F. Foote, Commissioner of Public Safety, and of the Fire Chiefs' Club of Massachusetts:

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. Chapter one hundred and forty-eight of the General Laws is hereby amended by adding at the end thereof the following new section:—Section 67. In addition to the powers elsewhere given, the marshal shall make orders and rules relating to fires, fire protection and fire hazard binding throughout the Commonwealth, or part thereof, or binding upon any person or class of persons, prohibiting or regulating the leaving of vehicles unattended within the limits of private ways furnishing means of access for fire apparatus to any part of a tenement house or apartment house as defined in section two of chapter one hundred and forty-five. The marshal may provide that any rule shall apply generally throughout the Commonwealth or to any specified part thereof or to any class or description of premises. No such rule shall be established until after a public hearing, of which notice shall have been given by publication for at least two successive weeks in one or more newspapers published in each city or town in which such rules are to become effective. Whoever violates any such rule or order shall be punished by a fine of fifty dollars, or, in case of a continued offence after notice of such violation, by a fine of ten dollars for every day during which the violation continues. It shall be the duty of the local police department to see that the provisions of this section are enforced.

HARRY BELKNAP.

Operation of Cairo Department

(*Continued from page* 102)

The present staff consists of seven officers, chief engineer, twenty-six mechanics and 310 non-commissioned officers and men. The equipment consists of nineteen motor propelled engines of which fifteen are pumpers, one Merryweather all powered fire escape and water tower (ninety-five feet when extended) and two trailer pumps that can also be drawn by hand for use in narrow streets. Seven of the pumps are installed in the sub stations within the city limits but are under control of the Central Fire Station.

Cairo Fire Boat with Officers and Crew on Deck

Besides fighting fires, the brigade plays an important part in the rescue of persons from collapsed houses and in the rescue of animals from street trenches and wells. For example in 1926 the brigade answered 665 fire alarms and seventy-seven rescue calls. Cairo is a progressive Egyptian city and requires a progressive fire department.

LUIGA M. MOLINARI.

Date Set for Southwestern Meeting

A meeting of the Southwestern Association of Fire Chiefs, a section of the International Association of Fire Chiefs, will be held at Texarkana, Arkansas, Texas on March 15 and 16. The convention city is located on the border line of Arkansas and Texas. At this meeting a constitution will be adopted and officers elected. J. E. Taplin of Blackwell, Okla., is temporary president.

The Southwestern Association covers the states of Oklahoma Arkansas, Louisana, Texas and New Mexico.

Firemen Injured in Truck Crash

Five firemen were thrown from the apparatus and two of the company were injured when Engine No. 15 of the New York Fire Department, crashed into a delivery truck, caromed off and snapped a telephone pole and street lamp. The truck driver was held for failing to stop on the approach of fire apparatus.

The fire was caused by an overheated furnace and resulted in slight damage.

The day before, there was an apparatus crash in Brooklyn and only the cushioning effect of a snow bank saved the seven firemen from serious injury when they were thrown from the machine and landed on the snow.

The driver of the apparatus swerved the machine sharply to avoid a collision with an automobile. The truck overturned.

Thames River Set on Fire

To determine the advisability of changing present regulations on the transportation of fuel oil, ten tons of gasoline were ignited on a creek of the Thames at the Isle of Grain.

A proposal has been made that the law be changed to allow petroleum in bulk to be brought up the Thames at a point beyond the place now permitted.

The oil was allowed to float for three hours after it had been poured into the sea. Tests were made to see how deeply the oil had settled. At the end of three hours most of the gasoline which had not evaporated had drifted into a space about thirty yards long. For nine minutes, after the oil had been ignited, flames went roaring skywards. No decision has been made as to the results of the tests.

Denies Increased Hazard from Oil

The New England Association of Fire Chiefs called to the attention of the proper officials that fuel oil burners and the storage of oil fuel has increased the problem of fire protection. They suggested changes in the present regulations to control the storage of oil and the operation of the burners.

A. F. Foote, commissioner, has written to the governor of Massachusetts, in part, as follows:

"The data offered for consideration by the Association presents no improvement over the current regulations of the Department of Public Safety governing the same matters which have been in effect since November 1, 1923, and which have worked out satisfactorily in practice. No abnormal fire hazard has been created by the introduction into this state of fuel oil burners for heating purposes. Contrary to the statement in the letter of the Association that the number of fires from this source had increased greatly in 1925, it appears from the reports made to this office by the heads of fire departments that there were approximately fifty per cent less fires of this kind during 1925 than there were in 1924. During the year 1925, there occurred in Massachusetts 9,166 fires affecting property and only 33 of these fires were connected in any way with the use of fuel oil burners for heating purposes. The reports for the current year are not yet complete, but an examination of those available does not indicate any necessity of adopting regulations more stringent than those now in force.

"The investigation by inspectors of this department of many of the fires reported as being caused by oil burners develops the fact that they were occasioned by other causes in no way connected with the burners or the storage of fuel oil. In my opinion there is no present need of changing the current regulations of this department governing the matters in question."

Two Dead in Tenement House Fire in New York City

Two women who were overcome by smoke, died as the result of a tenement building fire at 108th Street and Madison Avenue, New York city. One of the dead women was found holding a child in her arms. The smoke had suffocated the mother but the child was still alive. Four alarms were sent in before the fire was finally extinguished. A good view of the congested roof condition in New York city's tenement area can be obtained from the illustration, and a fireman operating on the roof after the fire.

Dr. Goodrich Dies in Los Angeles

Dr. E. G. Goodrich, of Los Angeles, Cal., president of the National Association of Police and Fire Surgeons, died in that city at 1:40 a. m., February 6, according to telegraphic advices received by Dr. Harry M. Archer, honorary deputy chief and surgeon, New York fire department.

What's Burning

(*Continued from page* 107)

MINNEAPOLIS, MINN.—Physicians & Surgeons Bldg.	40
SAN FRANCISCO, CAL.—Property of Acme Lumber Co.	80
OAKLAND, CAL.—Blakemore Tire Shop, 29th St.	25
NILES, ILL.—Niles Tavern destroyed	40
WELLSTON, O.—Plant of Wellston Mfg. Co.	150

Week Ending February 3

DICKSON CITY, PA.—Storehouse of Scranton Coal Co.	165
SPRING VALLEY, N. Y.—Dwelling of David Beck destroyed	25
CLEARWATER, FLA.—Kingstonia Apartments destroyed	70
INDIANAPOLIS, IND.—Residence, D. J. Zimmerman	40
PLAINFIELD, N. J.—Bldg. of British-American Metals Co.	400
PHILADELPHIA, PA.—Villanova College near here	1,500
ATLANTIC CITY, N. J.—Atlantic Foto Service and adj. property	250
SOMERVILLE, MASS.—Medford Business property damaged	25
DETROIT, MICH.— Babcock Bros. garage destroyed	35
RIVERTON, WYO.—Main bldg. St. Stephen's Mission	35
CLEVELAND, OHIO.—U. S. Parcel Post bldg. damaged	250
TAMPA, FLA.—Bostain Hotel bldg. destroyed	80
NEW ORLEANS, LA.—H. Weil Baking Co. Garage	25
BROCKTON, MASS.—Elk's Home damaged	65
HOLLYWOOD, CAL.—Studio of Warner Brothers	165
OAKLAND BEACH, R. I.—Boarding House & bathing pavilion	30
E. PITTSBURGH, PA.—Apartment building, Linden Ave.	50
VENICE, FLA.—Mill of Woodmere Lumber Co.	80
SUMTER, S. C.—Hampton Apt. bldg. of H. J. Harby	80
NASHVILLE, TENN.—Warehouse, Nashville Iron & Metal Wks.	25
McCAMEY, TEX.—Tanks of Humble Oil Co. destroyed	250
BOULDER, COLO.—Business establishments damaged	80
GARDINER, ME.—Bldg. of Wakefield & McNaughton damaged	30
MANASQUAN, N. J.—Osborn House destroyed	40
EAST BERGEN, N. J.—Trinity Episcopal Church, Cliffside Park	30
DENNISON, OHIO.—High school bldg. destroyed	25
PRINCETON, W. VA.—Meadows Furniture Co. and adj. prop.	40
DULUTH, MINN.—Office bldg. damaged	65
APPLETON, WIS.—Irving Zuelke bldg. destroyed	165
SAVANNAH, GA.—Bldg. of Atlantic Coast Line R. R.	30
KANSAS CITY, MO.—Issis Theatre destroyed	80
VICKSBURG, MISS.—Salvation Army Hdqts. and adj. prop.	25
HARTFORD, CONN.—Asylum street business property	25
PETERBORO, ONT.—Plant of Peterboro Lock Mfg. Co.	80
DECATUR, ILL.—Ten business establishments damaged	40
FARMINGTON, ILL.—M. E. Church destroyed	30
DETROIT, MICH.—Woodward Ave. business property	125
TORONTO, ONT.—Medical Bldg. of University of Toronto	80
RACINE, WISC.—Racine College Gymnasium destroyed	40
GREENVILLE, TENN.—First Presbyterian Church	80
AMORY, MISS.—Several business bldgs. damaged	65
FORT EDWARD, N. Y.—Harris block destroyed	100
NEW HAVEN, CONN.—Horton-Gallo-Creamer Bldg.	150
SOMERSET, KY.—St. Mildred's Catholic Church	45
SALEM, OHIO.—Plant of National Sanitary Co.	400
MINNEAPOLIS, MINN.—Garage of Midwest Oil Co. damaged	25
NEWBURYPORT, MASS.—Property of Phila. & Reading Coal Co.	60
CHASKA, MINN.—Business property destroyed	65
CAMPBELLSVILLE, KY.—Peoples Bank Bldg. & adj. property	30
PHILADELPHIA, PA.—Immaculate Conception Church, Jenkintown	80
ST. JOSEPH, MICH.—St. Joseph's Paper Board Co.	250
KINGSLAND, ARK.—E. R. Buster Mercantile Co.	65
ALEXANDRIA, LA.—Bldg. occupied by Lanier Auto Co.	25
TRENTON, MO.—Hubbell Theatre damaged	30
AMARILLO, TEX.—Plant of Amarillo Products Corp.	25
NEW LEXINGTON, O.—Colburn House and adj. property	80
SCRANTON, PA.—Three dwellings on Reynolds Avenue	50
OSWEGO, N. Y.—The Otis-Sawyer Plant	30
MODEL CITY, N. Y.—Factory of Tugwell & Wiseman	80
FALL RIVER, MASS.—Pocasset Mills and other business property	20,000
CONNELLSVILLE, PA.—Roundhouse of B. & O. R. R. destroyed	3,000

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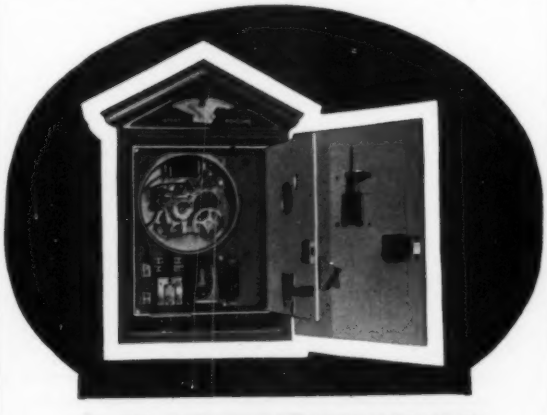

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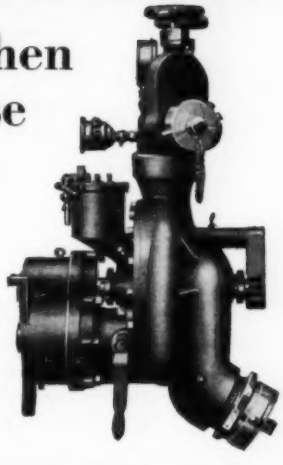

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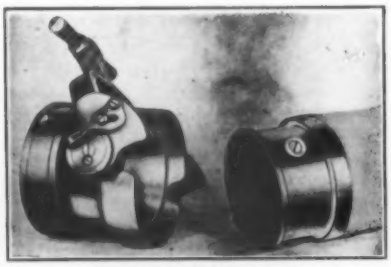

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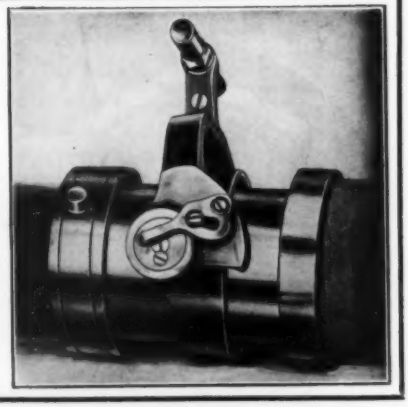
Executive Office: 215-217 Beach 122nd Street, Rockaway Park, N. Y.



HAHN

Motor Fire Apparatus

Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

Hahn Motor Truck Corp.,

Allentown, Pa.

HALE PUMPS

LONGER effective life, higher efficiency and greater freedom from trouble may be had by using Hale Dreadnaught Fire Pumps.

HALE FIRE PUMP CO.

Conshohocken, Pa.

FIRE DEPARTMENT ACTIVITIES

Woodsfield, W. Va., to Change Fire Alarm—Woodsfield, W. Va., will change its present fire alarm system.

Marengo, Ia., to Purchase Chemical Car—Marengo, Ia., will purchase a chemical car.

Panama City to Have New Fire Station—A modern two-story fire station is being planned for Panama City, Panama.

Department Organized in W. Elizabeth, Pa.—A volunteer fire department has been organized in West Elizabeth, Pa.

Babylon, N. Y., to Purchase Ladder—Babylon, L. I., N. Y., is to purchase a ladder truck for $10,000. The old truck has been in service for eighteen years.

Touhy Heads Chicago Fire Prevention Bureau—Division Fire Marshal John Touhy of Chicago has been promoted to head of the Fire Prevention Bureau, replacing John Plant.

Offers to Rent Fire Department—Ferndale, Mich., has made a suggestion to rent its fire department to Pleasant Ridge for $2,400 a year. The present charge is $50 an alarm.

Chief Soddy of Calumet, Mich., Retires—Chief Thomas Soddy of Calumet, Mich., has retired after many years service in the department.

Hudson, Mass., Has New Fire Station—The new fire station in Hudson, Mass., was opened recently for public inspection.

Baltimore, Md., Purchases Fire Alarm Boxes—Ninety fire alarm boxes have been purchased by Baltimore, Md., and will be installed in the New Annex.

Lackawanna, N. Y., to Add Firemen—Eight firemen will be added in Lackawanna, N. Y., following of the purchase of two pieces of fire apparatus.

Phoenix, N. Y., May Purchase Pumper—The Board of Trade of Phoenix, N. Y., is in favor of the town appropriation of $8,000 for the purchase of fire apparatus.

Dover, N. H., May Have New Station—A movement has been started in Dover, N. H., for the construction of a central fire station.

Milford, Conn., Still Doubtful on Site—Milford, Conn., is still undecided where it will erect the new central fire headquarters.

Deputy Chief Neumoegen of New York Returns—Honorable Deputy Chief M. L. Neumoegen of New York city, returned with his family from a visit to Havana.

Lackawanna, N. Y., Receives New Apparatus—A 1,000-gallon pumper and a 75-foot aerial ladder have been delivered to Lackawanna, N. Y.

Philadelphia Officer Hurt on Way to Fire—Fred Hogg, acting battalion chief of Philadelphia, Pa., was injured when the automobile in which he was riding was struck by a truck. He suffered from a fractured rib and concussions of the back.

Burlington, Ia., Firemen Receive Instruction—Each fireman in Burlington, Ia., will be trained in the operation of the pulmotor. Formerly the equipment was kept in the hospital but it has been moved to the central fire station.

Monongahela, Pa., Firemen Want Pay—A definite hourly scale for services in fighting fire and answering fire calls has been requested by members of the Monongahela, Pa., volunteer fire department.

San Leandro, Cal., to Vote on Issue—Firemen of San Leandro, Cal., want the city to include in the next election ballot, provisions for a $30,000 bond issue for the erection of a new fire station.

Site for Dallas, Tex., Station Not Decided—Several sites are still being considered for the erection of a central fire station in Dallas, Tex. Commissioner Parker is proceeding with plans for a consolidated North Dallas station.

Kilsoot Chemical Reports Big Sales—The Kilsoot Chemical Company reports that Baltimore, Md., fire department ordered three gross packages of Kilsoot and four hundred pounds of the chemical for use at the pumping station to clean boilers.

Wife of Chief O'Hanlon Dead—Mrs. Mae Koch O'Hanlon, wife of Deputy Fire Chief Joseph O'Hanlon of Brooklyn, died following a week's illness brought on by heart attack. She was forty-one years old.

Fire Breaks Out From Fireproof Paint—The explosion of a barrel of fireproof paint in Mobile, Ala., destroyed a three-story brick building and caused a $100,000 loss. One man broke both his legs as he jumped from a third-story window.

Cody, Wyo., Firemen Protected by Insurance—Members of Cody, Wyo., department are covered by a blanket insurance policy. In case of death, the beneficiary will be paid $2,000 or $100 a month will be paid those incapacitated or unable to work.

Firemen Accused of Setting Fires—Prompted by a desire to further the glory of their company, firemen of Mt. Ephraim, N. J. are accused of causing an epidemic of fires. People became suspicious of the sudden number of fires and the fact that No. 2 was always the first to reach the blaze.

Glencoe, Ill., Firemen Fight Fire in "Tuxs"—Although building damage was set at only $5,000, eleven dinner suits were a total loss because members of the Glencoe, Ill., department who attended the department's annual banquet in formal attire, responded to a fire alarm.

Portland, Ore., to Have Boats this Year—The three new fire boats of Portland, Ore., will be placed in service this year. The boats are gasoline driven and can easily pass under bridges without opening the draws. They have been built at a total cost of $300,000.

Boston Firemen Win Suit Against Elevated—Damages amounting to $8,850 have been awarded to two members of Engine Company No. 13 of Boston, Mass., as a result of their suit against the Boston Elevated Railway following injuries received when Engine 13 was struck by a street car.

Baltimore Captains Try for Battalion Chief—Thirteen of the thirty-one fire captains seeking promotion to the grade of battalion chief engineer in Baltimore, Md., have passed their physical and mental tests. Fourteen lieutenants out of twenty-nine failed in tests and sixty-eight firemen out of 183.

New York May Have Deputy Chief Examination—Commissioner John J. Dorman of New York City has requested that an early date be set for promotion examinations to the rank of deputy chief and battalion chief. The existing list expires next October.

Chief Soddy of Calumet, Mich., Resigns—A gold charm inscribed with his sixty-one years' service record was presented to Chief Thomas Soddy on his resignation from the Calumet, Mich., department. Berger Berner who has been assistant chief for the past thirty-five years retired with his superior and was presented with a similar charm.

New Station Opened in Roselle, N. J.—The new central station in Roselle, N. J., was officially opened. The first floor is for the apparatus, the second is for the firemen, and the third floor has an auditorium and stage to be used for public functions. The opening was fittingly observed with a parade and public exercises.

Firemen Under Guard Fight Fire—Members of the Monongahela fire department, protected by an attachment of state troopers from the Library Barracks, fought a fire that swept three houses of the Pittsburgh Coal Company at Hackett, Pa. The fire company answered the call after the Finleyville department refused to respond because they were attacked by union sympathizers.

New Station Urged for W. Orange, N. J.—The erection of a new fire station in the southern section of West Orange, N. J., is being urged by Chief Kennedy. Two fire prevention ordinances have been recommended by the chief—one to keep yards and property clear of refuse and weeds and the other to have cellar ceiling beams covered with some kind of fire resistant material.

Chief Shire Shows Results at Mason City, Ia.—D. H. Shire, chief of the fire department at Mason City, Ia., for the past month, is showing the result of his organization. A new car was purchased for his use and building inspections have been started. He has the full cooperation of other department members. Chief Shire was formally in charge of the Fire Department of Rock Island arsenal.

Four Pumpers Added in Los Angeles—Chief Scott of Los Angeles, Cal., has established a standard of having one pumper for each one thousand population. With a view of attaining that ideal, four triple combination pumpers have been added last year and a fire boat is under construction. Two city service trucks have also been added to the department. The arson division has grown so that the local police department has been entirely relieved of this kind of work.

PROPOSED IMPROVEMENTS

Tenino, Thurston Co., Wash.—Reports state City Council is planning to purchase a new piece of apparatus and fire hose for the fire department.

Newport News, Warwick Co., Va.—Reports state a new aerial ladder truck and a 1,000 gal. capacity pumper is to be purchased for the fire department here. J. C. Biggins City Manager.

Peoria, Peoria Co., Ill.—Fire Chief Cornelius Connors recommended in his annual report the purchase of two 750-gallon combination hose and pumper trucks to replace present ones at Engine House 4 and 5; also purchase of a service truck for use in Averyville which is to be annexed.

Eureka, Humboldt Co., Calif.—City Council ordered City Electrician and City Engineer to prepare plans and specifications for rebuilding entire fire alarm system.

Paris, Henry Co., Tenn.—City Council considering the purchase of a new piece of apparatus at estimated cost of $12,500 and the erection of a fire station in west end of town. Marvin McSwain, Chief Fire Dept.

Wayne, Wood Co., Ohio.—Plans are under way to purchase a community fire truck.

Rheems, Lancaster Co., Penn.—Plans are being made to erect new fire station in near future.

Fire Truck Wanted

Sauk City is in the market for a Community Fire Truck. For specifications write: W. G. Rischmueller, Sauk City, Wisconsin. B-2-7.

2-8

Fighting Fires in Frame Tenements

(*Continued from page* 100)

method generally confines the fire to the rear piazzas and stairways.

In general the foregoing are the most important points to remember in the fighting of fires in frame tenements and buildings. While the usual precautions should be taken, such as prevail in fire practice, extreme caution must be taken at fires in this class of construction, to guard against the spread of fire, and to this end the following summary will be of valuable assistance:

Remember the object is to confine the fire, then control and extinguish it.

While the fire is burning, observe where it is burning, and what chance it has to spread, or how it might spread; and take the precautions necessary by opening up the concealed spaces which permit the passage of fire and place the lines accordingly.

After the fire is under control or practically extinguished, care must be taken to examine all openings and concealed spaces for fire.

It is a good fire practice, after every fire, and before you leave the building, to examine the floors above and below the fire; feeling around the walls, and around pipe and shaft openings, and make sure that there is no fire left behind, so that there will be no chance of a rekindle.

Judgment must be exercised by officers in sending for assistance. The construction of the building is known, also how the fire may travel and what may result from a delay in calling for assistance. If the fire is found spreading on arrival, don't hesitate in sending for help. Supposing for instance that a fire has made headway in an attic, and upon arrival smoke or fire is found coming from the cornices, would it not be reasonable to assume that the fire was spreading, and that help was needed to confine this fire to its point of origin? Remember that many times one may be left to his own resources and to judge for himself, as the chief of battalion or other officers may be absent at another fire.

Many Misread N. Y. Captain Exam. Question—A number of candidates for promotion in the New York city captain's examination erred in reading "thirteenth" floor for "thirtieth" floor. On the whole, the candidates are well pleased with the questions on the test sheets and not more than two left the examination hall without finishing the test.

CONVENTION DATES

May 7-10—NATIONAL FIRE PROTECTION ASSOCIATION (International). 32nd Annual Meeting, Atlantic City, N. J. Secretary, Franklin H. Wentworth, 40 Central Street, Boston, Mass.

May 10-11—ARIZONA STATE FIREMEN'S ASSOCIATION. 5th Annual Convention, Bisbee, Ariz. Secretary, Chief W. J. Nemeck, Douglas, Ariz.

June—WISCONSIN STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and Tournament, (tentative date) about middle of June, at Kiel, Wis. Recording secretary, E. Philip Mueller, Jefferson, Wis.

June—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 34th Annual Convention and State Firemen's Training School (tentative date), Blackwell, Okla. (Exact date to be fixed by Executive Board.) Secretary, Charles Slemp, 651 East 12th St., Oklahoma City.

June 5-7—KENTUCKY STATE FIRE CHIEFS' AND FIREMEN'S ASSOCIATION. 10th Annual Convention, Middlesboro, Ky. Secretary, Captain S. G. Render, Fire Department Instructor, 303 Speed Building, Louisville, Ky.

June 16—LEBANON COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Palmyra, Pa. Secretary, William I. Kutz, Box 233, Myerstown, Pa.

June 19-21—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 39th Annual Convention, Kingston, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y., Fire Department.

June 20-23—PROVINCIAL FEDERATION OF ONTARIO FIRE FIGHTERS. Annual Convention, King Edward Hotel, Toronto, Ont., Can. Secretary-Treasurer, David H. Lamb, 132 Bellevue Avenue (2) Toronto.

June 25—NORTHWEST FIREMEN'S ASSOCIATION. Semi-Annual Convention, Centerton, Ark. Secretary-Treasurer, F. M. Brock, Bentonville, Ark.

June 26-29—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 6th Annual Convention, Burlington, Vt. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

August—UTAH STATE FIREMEN'S ASSOCIATION. 21st Annual Convention, Binham Canyon, Utah. (Date to be set at April meeting.) Secretary, Harris E. Anderson, Fire Headquarters, Salt Lake City, Utah.

Aug. 22-24—VIRGINIA STATE FIREMEN'S ASSOCIATION. 42nd Annual Convention, Ocean View, Va. Secretary, Chief J. B. Gordon, Newport News, Va.

Sept. 18-19—IOWA FIREMEN'S ASSOCIATION. 51st Annual Convention, Independence, Ia. Secretary, E. E. Parsons, Marion, La.

Oct. 1-5—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Uniontown, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 9-11—RAILWAY FIRE PROTECTION ASSOCIATION. Annual meeting, place to be selected later by Executive Committee. Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

Oct. 22-24—KANSAS STATE FIRE CHIEFS and FIREMEN'S ASSOCIATIONS and WOMEN'S AUXILIARY. 13th and 42nd Annual Conventions and 3d Meeting, respectively, Liberal, Kans. Secretary, Chief K. D. Doyle, Wamego, Kan.

New Fire Station Opened in Queens, N. Y.—A new fire station was opened in Queens Village, a part of New York City, on January 14.

Chief Dyche Entertains London, Ky., Firemen—Members of the London, Ky., fire department were entertained at a dinner given by Chief Russell Dyche and Mrs. Dyche. Entertainment was provided after the dinner.

New Foam System Tested at Newark, N. J.

Many engineers and fire prevention men witnessed the test of the "Phomene," system at the plant of the Pyrene Manufacturing Company, Newark, N. J. The system operates by the fusing of a sprinkler head link which permits water to flow through the pipes and the foam generator. This is one of the many tests that were arranged for the information of the guests.

This Signal two-collar shirt is now regulation style among fire fighters in many large American cities. Let us send samples.

Signal Shirt Company
Racine, Wisconsin

Signal

"Shuredry" Waterproofed SALVAGE COVERS

Chief D.W. Brosnan

See what Chief Brosnan, of the Albany Fire Department has to say about Shuredry for salvage work.

"We have used SHUREDRY covers in all our salvage work for a number of years; we have found them durable and they give absolute satisfaction. They are light and easy to handle which makes for speed, and speed means everything in salvage work."

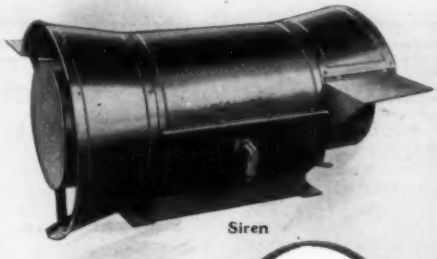
"We carry six standard size covers on each piece of apparatus and through their use we have saved thousands of dollars of water damage that otherwise could not have been avoided. I have no hesitancy in recommending them."

Write for Shuredry samples and prices.

FULTON BAG & COTTON MILLS

Atlanta Dallas Brooklyn St Louis Minneapolis New Orleans

Holtzer-Cabot Fire Alarm Systems for Small Towns



Siren

"M D" Fire Alarm Station

ELECTRIC SIRENS

For Fire Alarm Signaling

In small towns where an unmistakable penetrating signal is required the Holtzer-Cabot Siren with its distinctive tone ranging from a deep guttural roar to a weird penetrating screech commands instant attention.

It has a sound penetration radius of about two miles in ordinary conditions.

Write now for specifications.

Fire Alarm Control Panel in Case

Manufacturers of Signaling Systems for over 50 years

THE HOLTZER-CABOT ELECTRIC COMPANY

125 Amory Street, Boston, Mass.

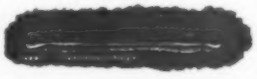
6161-65 So. State Street, Chicago, Ill.

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
230 West Randolph St., Chicago, Ill.

If you purchase BI-LATERAL FIRE HOSE it will increase the value of your hose-carrying apparatus more than the cost of the load of Bi-Lateral Fire Hose.

We can load from 25% to 33% more and when coupled with rocker lug couplings the Bi-Lateral hose makes an apparatus one to be proud of and as near perfect as possible to do quick and efficient service.



SOUTHWORTH
Quality Fire Apparatus

300 to 750 Gal. Triple Combination Pumpers.

City Service Ladder Trucks, Combination and Chemical Cars.

Recent Sales
Harrison, Maine
300 Gallon Pump

Waterville, Maine
One Tank Combination

Charlestown, N. H.
500 Gallon Pump

SOUTHWORTH MACHINE CO.
Fire Apparatus Division
52 Sagamore Ave., Chelsea, Mass.
Factory: Portland, Maine *Tel. Chelsea-2105*

Clifton Salvage Covers

Are made of strong, heavy duck and lapped seams and are designed of such thickness and weight as to be light enough to be handled quickly and rigid enough for the most strenuous service. They are rubberized on both sides with a double coating of a high grade, long life, rubber compound.

CLIFTON SALVAGE COVERS are built to stand the heaviest abuse and are used by many of the large Protective Departments.

May we send you further particulars?

Clifton Manufacturing Company
Jamaica Plain District :: Boston, Mass.

Quick-Acting Reliable

Anderson-Hale Improved

FIRE STATION DOOR OPENERS

Over 1,300 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening. Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.
Mfrs. Motor Fire Equipment and Fire Supplies
Kansas City, Kansas

OVER TWO HUNDRED

DON'T FEAR

Smoke and Fume Respirators
Used in 50 Southern New Jersey towns. Assure Safety to the Firemen.
Are you Protected?

Price $5 each. With airtight goggles $6.
Send for descriptive catalogue.

Gibbs-Wahlert Mask Co.
Station G, Box 168, New York, N. Y.

Eastman Improved Platforms and Holders

Write for Catalogue

are indispensable where high pressure service is required. With Eastman equipment any size streams can be easily handled by one man.

Eastman Nozzles and Deluge Sets

are designed by engineers who for over thirty years have specialized in equipment for producing fire-fighting streams that are unsurpassed for solidarity, distance and effectiveness.

Samuel Eastman Co.,
Concord, N. H.

The made to measure and to fit

"Famous Kalamazoo" Firemen's Uniforms

Wear Longer and Look Better—but Cost no More.

Try one and you will always wear them.

The HENDERSON-AMES CO.
KALAMAZOO, MICH.

LARKIN Shut-off Nozzles

Over 2000 Fire Departments have 15,000 Larkin Shut-off Nozzles in service. They have a successful record that is not exceeded by any article used in the fire service. Specify and insist upon them in buying new apparatus.

Write for catalog

The LARKIN Mfg. Co.
Dayton, Ohio

High Grade Fire Dept. Supplies of All Kinds

FALSE ALARMS

The Raw Recruit Doesn't Take Any Chances in the Serious Business of Fire-Fighting. He Goes by the Book of Rules

THEY ALL CAME

Only the quick action of the fire department saved the elaborate home of Mrs. Leeland Smith-Taylor. In appreciation of the good work, the madam decided to invite the captain to her next reception. He received the following note:

"Mrs. Leeland Smith-Taylor requests the pleasure of Captain McCarthy's company at a reception on February 10."

McCarthy was versed in what was expected of a gentleman. He wrote a note of acceptance:

"With the exception of the four men who have been transferred to another shift and the fireman who has been suspended for drunkeness, Captain McCarthy's company accepts with pleasure Mrs. Smith-Taylor's invitation for the Tenth of February."

A PRECEDENT WITH POSSIBILITIES

There is a Santa Claus! A baby was born in Fall River, Mass., on December 25 and the parents registered his name with the city clerk as Santa Claus Connors.

Imagine what would happen if a baby was born while a hospital was on fire. They might name the child "Red Hot Connors," or something as descriptive.

A FAIRY TALE

Once upon a time there was a motorist who thought that he could beat a fire engine to a street crossing. But he only thought that. His spirit soon traveled up to the famous river Styx. He engaged the noted ferryman in conversation and asked if there were any autos in heaven.

"No, there ain't no autos there but I can take you to Satan. He has some."

The bargain was made. The motorist's spirit was brought to Satan. In that domain there was a long row of expensive cars. The motorist was delighted.

"Take your pick," said Satan with a mysterious chuckle.

This the spirit did. He jumped into the most expensive car and shouted:

"Which way now? Where's the road?"

"There isn't any road," said the Devil. "That's the Hell of it."

GOOD EYESIGHT

Tom Baker was just elected mayor. That meant a great deal to the fire chief. At least he was sure of his job for another two years. Of course, the chief in common with other city employees went out to celebrate. But his wife was suspicious and awaited the return of the chief.

"Sorry I am late," said the culprit, "I was up talking business to Tom Baker."

"Yes," replied his wife, "and I suppose that that is baking powder on your shoulder."

Public officials are first sworn in and then cussed out.

FAR FROM WORRY

"Did you hear what happened to Bob at the Johnson's Warehouse fire?"

"No, what happened?" asked a member of Company 6.

"Bob was going into the building with a hose line when a beam fell down on him."

"Did it hurt him?"

"Not a bit."

"That's fine," said the member of Company 6.

"It didn't hurt him, because Bob was killed instantly."

A penny saved is a pocket burned.

BOTH ARE DANGEROUS

Not far from the fire house was the new church. It boasted of a most modern minister. He would often drop into the station and discuss current problems with the captain. The talk one day drifted to the younger generation.

"Do you think, captain, that autos are ruining the younger generation?" asked the minister.

"No, I don't," replied the captain, "but judging from the happenings of the last few days I would say that the younger generation plus the fire department was ruining the autos."

HE NEVER WANTED ANY

It is doubtful if any device will attract as many people as the rush of fire apparatus to a fire. In this instance, it was a warehouse blaze. Companies came rushing to the scene from almost every possible direction. There was the general commotion incidental to such a large fire.

A fire truck passed by one man who was more than slightly inebriated. He heard the whistling sirens and saw the glare of red lights. He gave chase to the apparatus for nearly a block and then stopped completely exhausted.

"To the devil with you," he said, "I don't think I'll have any of your peanuts." R. M. C.

NO WORDS WASTED

The fire preventionist can learn a great deal from a sign that was posted in a garage out in New Mexico. This sign reads as follows:

"Don't smoke around the tank. If your life isn't worth anything, gasoline is."

Just when the firemen thinks that he can make both ends meet, some one moves the ends.

A REQUISITE

Not every city has civil service examinations to select men for the fire department. In this city, each applicant was interviewed by the chief and if found satisfactory, was given a temporary appointment. The chief had a pet question that he presented to all the candidates.

An Irish fireman, endowed with more than the usual wit, applied. He answered all previous questions; but some in a facetious manner.

"Now, my good man," said the chief, "suppose that you entered a burning building. If I wanted to clear the basement of smoke and asked you to wheel out a barrel full, could you do it?"

"Sure," replied the applicant, "if you barrel it for me."

HE KNEW THE CAPTAIN

Many firemen submitted themselves for oral examination for the rank of captain in a western department. Among the questions asked was the following:

"What would you do if, after you had assisted your captain from a smoky cellar, he fainted?

To this question, one candidate answered, "I would bring the Captain to."

The examiner than asked the next man in line what he would do if the Captain didn't respond to treatment.

"I would bring him two more," was the answer.

OUT OF THE CLASS

All night long, one of the firemen in the dormitory kept the others awake by his constant coughing. They felt sorry for him for he had caught a severe cold at a fire the night before.

In the morning he was coughing just as much as ever. He asked the desk man, "D'you know a good cure for a cold?"

"Have you got the price of a couple of drinks on you?" asked the desk man.

"No, I haven't."

"Well, then it ain't much good me tellin' you then."

INDUSTRIAL PLANT PROTECTION

FIRE PROTECTION SERVICE CRIPPLED BY STICKS AND STONES

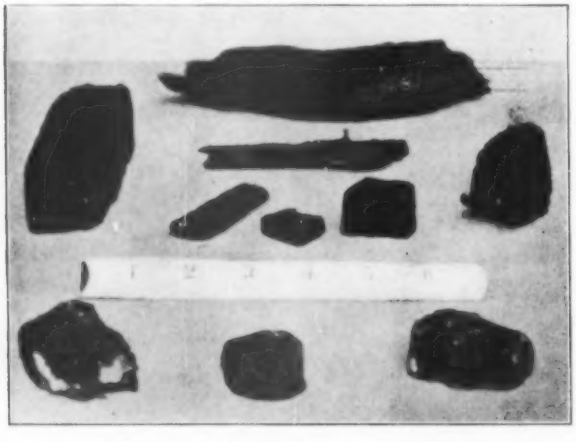
How Insignificant Articles Can Cause No End of Trouble in the Pumps—Snail Shells Clog a Screen

SMALL sticks or stones or even snail shells are insignificant things in their place, but they can cause a great deal of trouble once they get into the mains supplying water to fire pumps.

Each year inspectors make fire flow tests to determine the reliability of the systems at Factory Mutual mills.

For example, at the Ubrey L. Sykes building in Chicago, a 750-gallon centrifugal pump takes suction from the city mains through an eight-inch pipe. The suction is equipped with a six-inch current meter of the turbine type which incidentally is not favored for fire protection purposes because of its obstructed waterway. The water was protected by a fish trap having a perforated plate screen with 3/16-inch holes and a total waterway less than that of the 8-inch pipe.

Numerous incidents have indicated that screens on suction supplies from ponds and river should have about a half-inch mesh and an effective area of one square inch for each gallon-minute pump capacity. Cleaner water in public mains permits a screen perhaps half that size.



Sticks and Stones from a City Main

This material drawn into a centrifugal pump clogged the impellers until disclosed by a full-capacity pump test.

When testing the pump inspectors found the discharge pressure low, the quantity of water delivered considerably less than the rated capacity, and a 20-inch vacuum on the suction line. Upon investigation, the screen in the fish trap was found badly clogged with snail shells, which had plugged about nine of every ten holes. The screen was cleaned and a second test then gave satisfactory results, with a residual pressure of eleven pounds on the suction line with the pump running. This screen was designed to protect the meter, and not the pump. A recommendation was made for a larger screen with larger orifices.

At the Hilliard & Merrill plant in Lynn, Mass., a 1000-gallon centrifugal fire pump takes suction from the city mains through an 8-inch line. A test showed poor results. The pump casing was opened for investigation, and a number of sticks and stones were found lodged in the impellers. This foreign material probably got into the pipe by accident when it was laid about six years ago. After the obstructions were removed, the pump operated satisfactorily on a second test.

Tests disclosed two other centrifugal fire pumps with their impellers clogged. One pump took suction from a flume and was obstructed by a stick and the two halves of a small tin can. This foreign material had probably been in the flume previous to the installation of screens two years ago. The other pump took suction from a river and was protected by double removable screens at the intake sump, but small blocks of wood which probably had remained in the suction line or sump since 1924 finally found their way into the impellers of the pump and became lodged there.

This clogging of the impellers of centrifugal pumps is a real danger. A comparatively small amount of material will seriously cut down the amount of water delivered. Screens are therefore needed whenever suction is taken from reservoirs or open bodies of water likely to contain chips of wood or other material which may be drawn into the pump. Suction from city mains would suggest freedom from the danger of clogging, but foreign material in small amounts is occasionally found in city mains; and when centrifugal pumps with impeller passages less than 5/8-inch wide take suction from street mains, screens are an important safeguard. Screens should have an area five to ten times that of the pipes and should be capable of being readily cleaned. Cases such as this also show the value of testing all fire pumps to disclose faults otherwise not apparent.

Clogged impellers do not appreciably affect smoothness of operation and so cannot be detected by merely running the pump. Other faulty conditions in this and other types of fire pumps are often not apparent upon cursory examinations or meager tests. By taking pressure readings and computing the flow at full capacity once a year, under the same conditions as would obtain in case of fire, inspectors determine whether or not these pumps are actually in good operating condition and power and suction supplies are adequate. When they are not, the cause is investigated and a remedy outlined. In this way everything possible is being done to assure an unfailing water supply in case of fire.—*Factory Mutual Record.*

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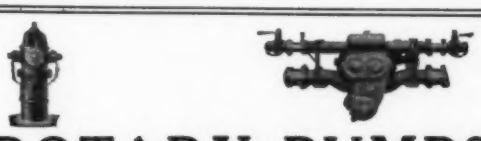

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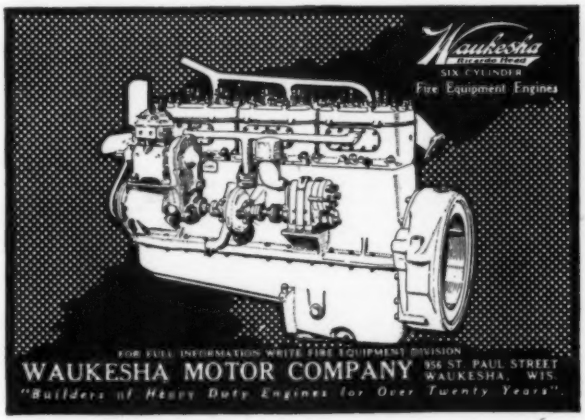

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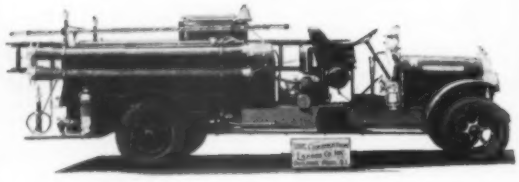

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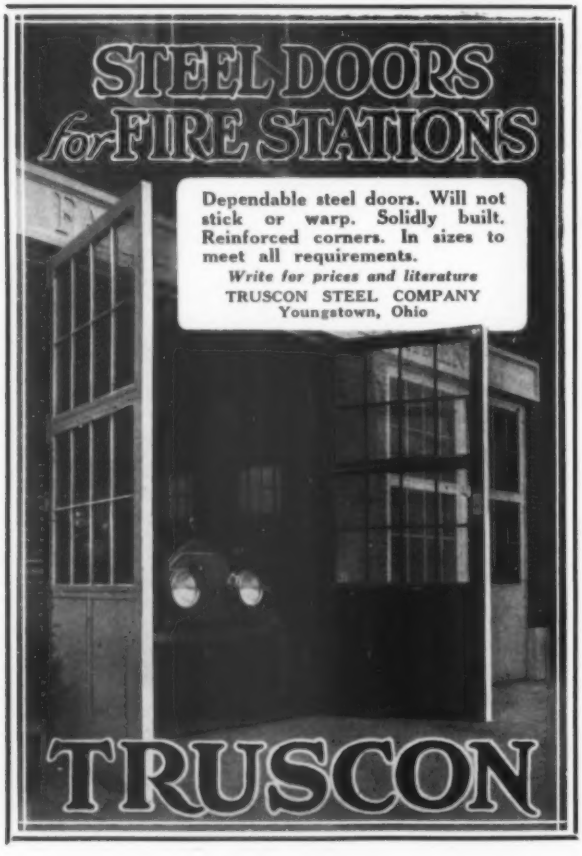

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ADVERTISING INDEX

Advertising Pays — in Fire Engineering

	PAGE
Ahrens-Fox Fire Engine Co.	93
American District Telegraph Co.	117
American Fomon Company	111
American Steam Pump Co.	117
Anderson Coupling & Fire Supply Co.	122
Automatic Power Door Mfg. Co., Inc.	95
Bi-Lateral Fire Hose Co.	122
Blanchard, Arthur	125
Braxmar Co., C. G.	118
Buckeye Iron & Brass Works	91
Buffalo Fire Appliance Corp.	130
Clay, Inc., John H.	126
Clifton Mfg. Co.	122
Combination Ladder Co.	128
Darling Valve & Mfg. Co.	94
Decot Machine Works	126
Eastman Co., Samuel	122
Eddy Valve Co.	126
Erick Electric Siren Co.	126
Eureka Fire Hose Mfg. Co.	*Front Cover*
Everson-Ross Co.	125
Fabric Fire Hose Co.	*Back Cover*
Fulton Bag and Cotton Mills	121
Gamewell Co.	96
Gibbs-Wahlert Mask Co.	122
Hahn Motor Truck Co.	118
Hale Fire Pump Co.	118
Harrington-Seaberg Corp.	117
Henderson-Ames Co.	122
Holtzer Cabot Elec. Co.	121
Information for Buyers.	**127**
International Harvester Co.	*Inside Front Cover*
Kilsoot Chemical Co.	125
Larkin Mfg. Co.	122
Maxim Motor Co.	126
Mine Safety Appliance Co.	128
Morse & Sons, Inc., Andrew J.	126
National Standard Threadless Coupling Corp.	118
Reeds Sons, Jacob	125
Rensselaer Valve Co.	126
Seagrave Corp.	110
Signal Shirt Co.	121
Southworth Machine Co.	122
Sterling Siren Fire Alarm Co.	130
Truscon Steel Co.	128
Union Water Meter Co.	128
Waterous Company	125
Waukesha Motor Co.	125
Wausau Fire Hose Protector Co.	126
Wood & Co., R. D.	118
Woodhouse Mfg. Co.	125

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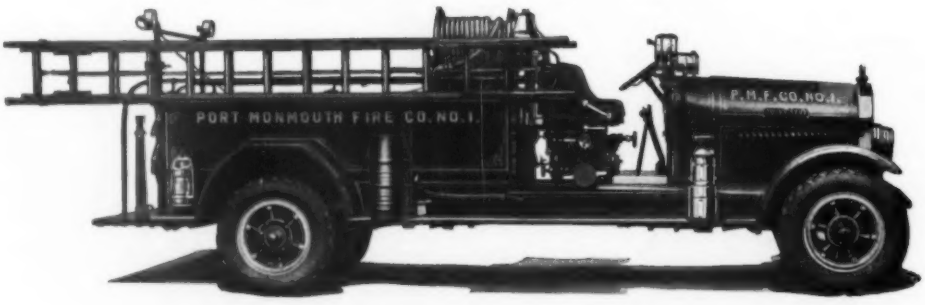

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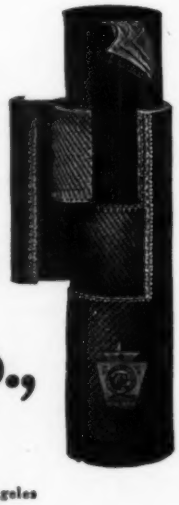

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